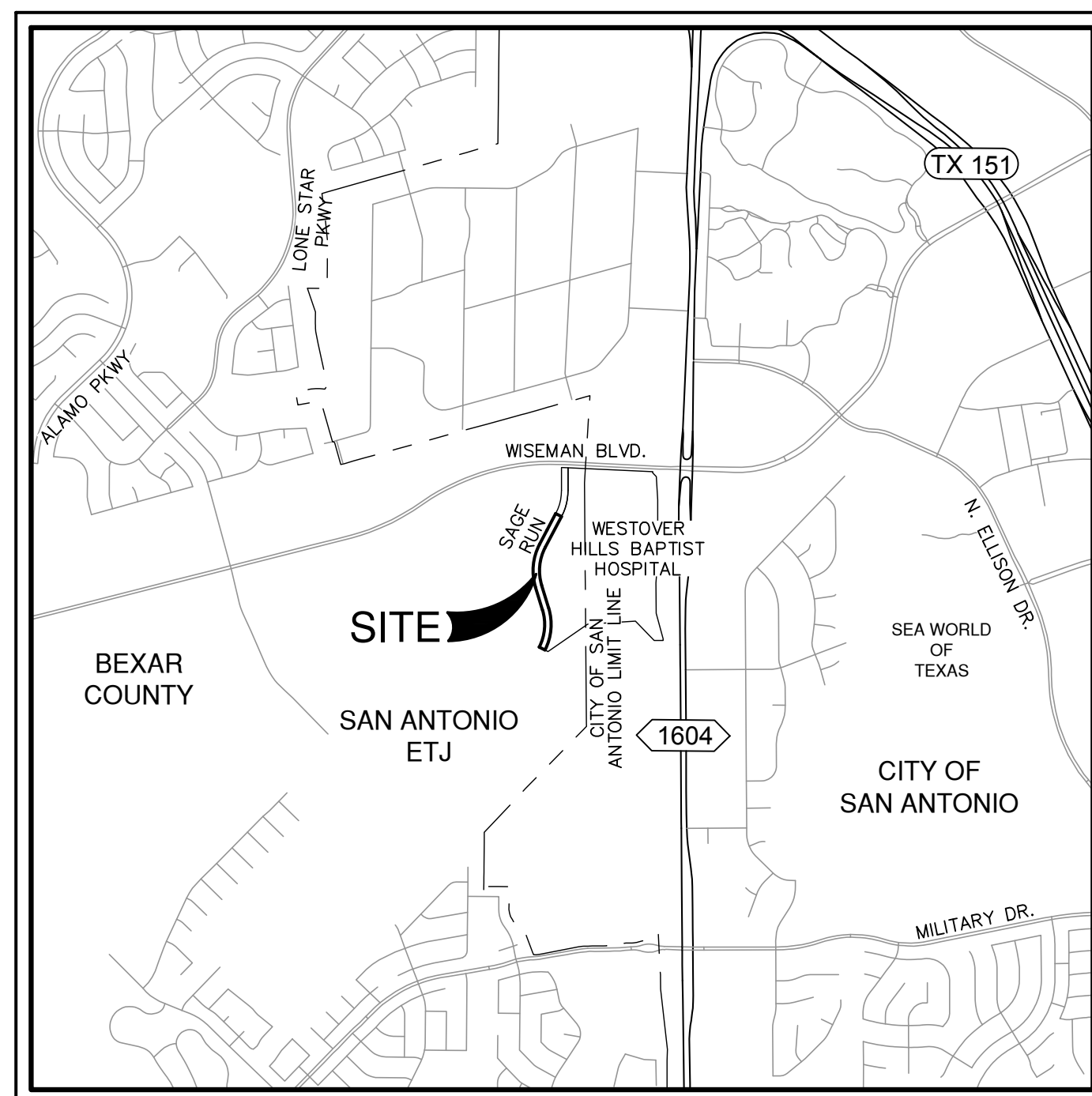


SAGE RUN, PHASE 2

SAN ANTONIO, TEXAS

CIVIL CONSTRUCTION PLANS



LOCATION MAP

NOT-TO-SCALE

PREPARED FOR:

TENET HEALTHCARE
14201 DALLAS PARKWAY
DALLAS, TEXAS 75254

NOVEMBER 2024

**PAPE-DAWSON
ENGINEERS**

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TBPE FIRM REGISTRATION #470 | TBPLS FIRM REGISTRATION #10028800

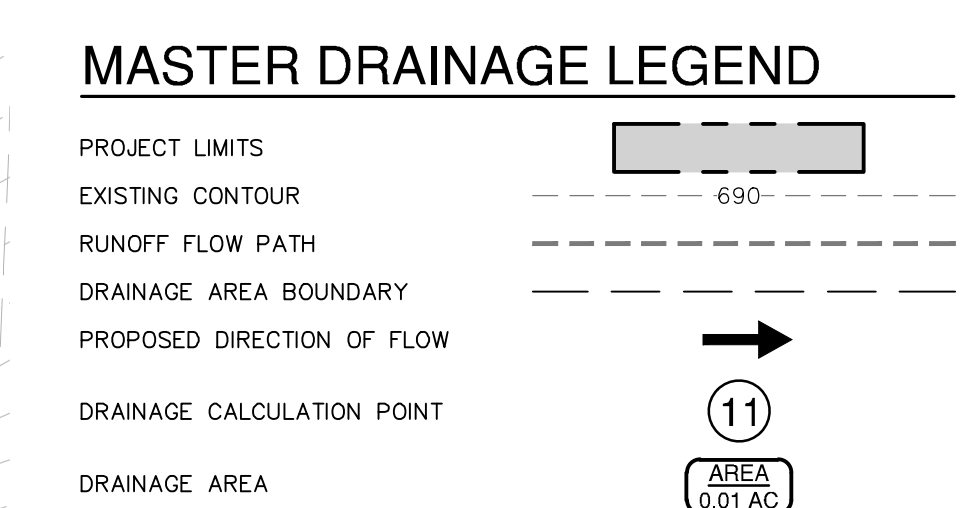


Sheet List Table	
Sheet Title	Sheet No.
COVER SHEET	C0.00
OVERALL DRAINAGE (PH-2)	C1.00
DRAIN PLAN & PROFILE (DRAIN C)	C1.01
DRAIN PLAN & PROFILE (DRAIN E)	C1.02
DRAIN PLAN & PROFILE (DRAIN E)	C1.03
DRAIN PLAN & PROFILE (DRAIN F)	C1.04
DRAIN PLAN & PROFILE (DRAIN F)	C1.05
DRAIN PLAN & PROFILE (DRAIN G)	C1.06
DRAIN PLAN & PROFILE (DRAIN G)	C1.07
DRAIN PLAN & PROFILE (DRAIN H)	C1.08
DRAIN DETAILS	C1.10
DRAIN DETAILS	C1.11
DRAIN DETAILS	C1.12
DRAIN DETAILS	C1.12A
DRAIN DETAILS	C1.13
DRAIN DETAILS	C1.14
DRAIN DETAILS	C1.15
DRAIN DETAILS	C1.16
DRAIN DETAILS	C1.17
STREET PLAN & PROFILE (SAGE RUN)	C2.00
STREET PLAN & PROFILE (SAGE RUN)	C2.01
STREET DETAILS	C2.10
STREET DETAILS	C2.11
STREET DETAILS	C2.12
STREET NOTES	C2.13
OVERALL SIGNAGE PLAN	C3.00
SIGNAGE DETAILS	C3.10
SIGNAGE DETAILS	C3.11
SIGNAGE DETAILS	C3.12
OVERALL WATER DISTRIBUTION PLAN	C4.00
WATER DETAILS	C4.10
OVERALL UTILITY PLAN	C6.00
STORMWATER POLLUTION PREVENTION PLAN	C8.00
STORMWATER POLLUTION PREVENTION DETAILS	C8.01

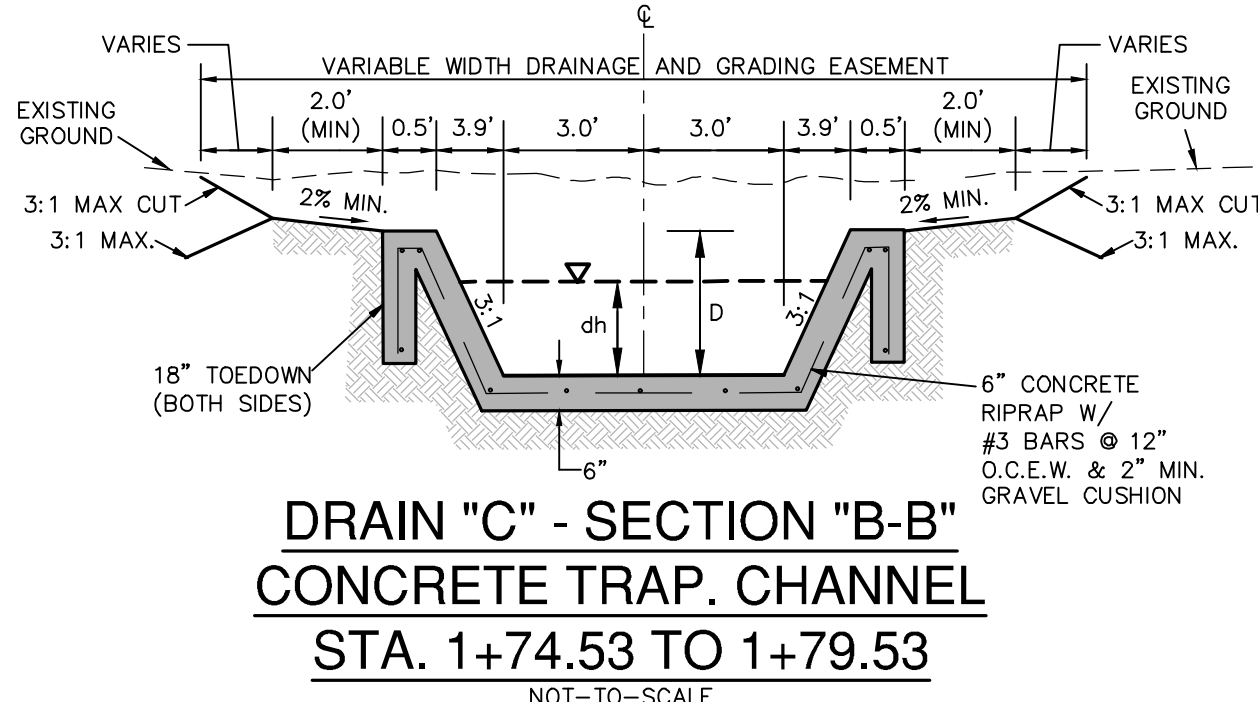
WATER (SAWS PRESSURE ZONE 8)

DEVELOPER'S NAME:	TENET HEALTHCARE
ADDRESS:	14201 DALLAS PARKWAY
CITY:	DALLAS
STATE:	TEXAS
ZIP:	75254
PHONE#	615-418-3578
FAX#	N/A
SAWS BLOCK MAP#	088618
TOTAL EDU'S	0
TOTAL ACREAGE	3.67
TOTAL LINEAR FOOTAGE OF PIPE	12" 1,867 LF
PLAT NO	22-11800755
NUMBER OF LOTS	23
SAWS JOB NO.	23-1163

SHEET C0.00

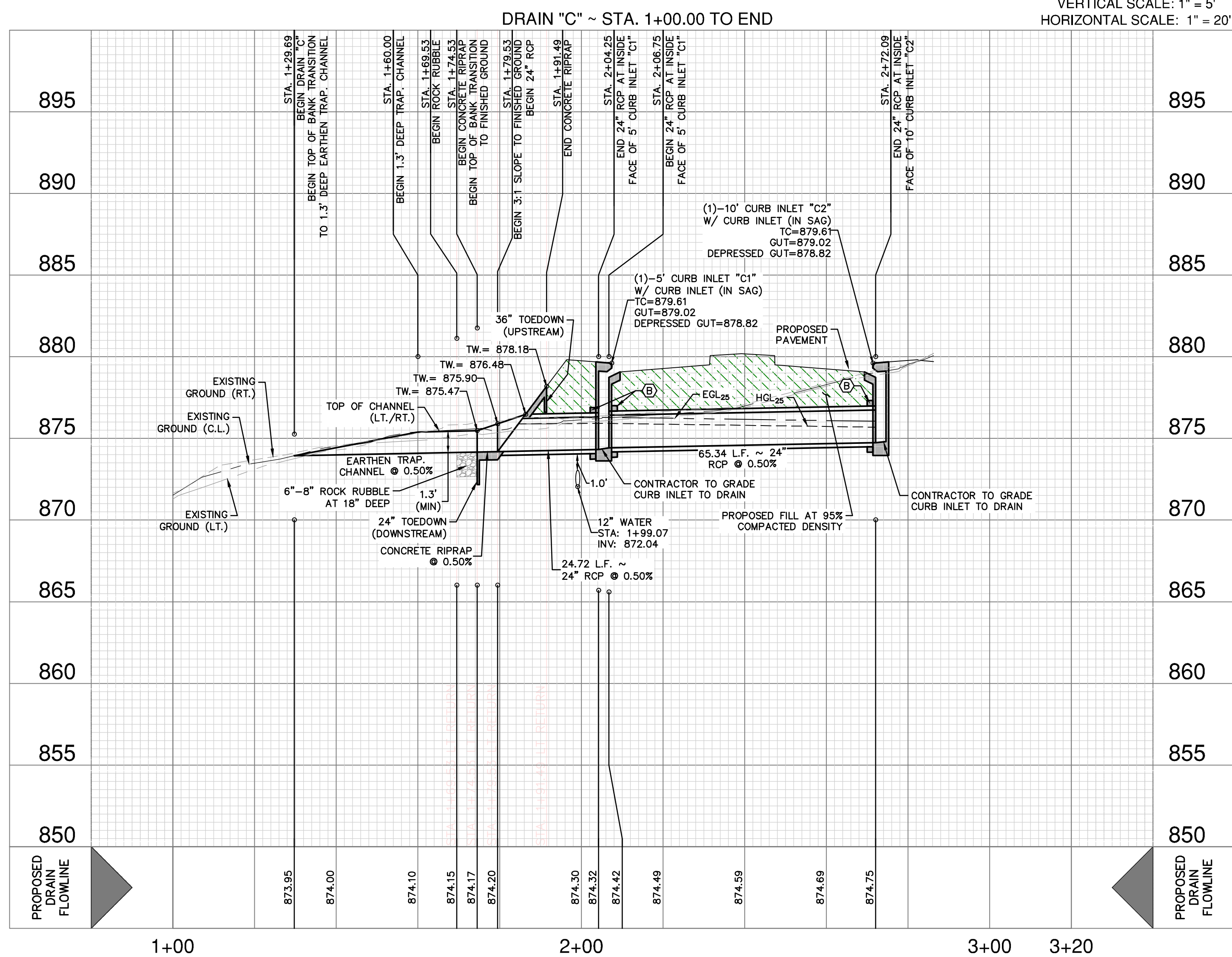
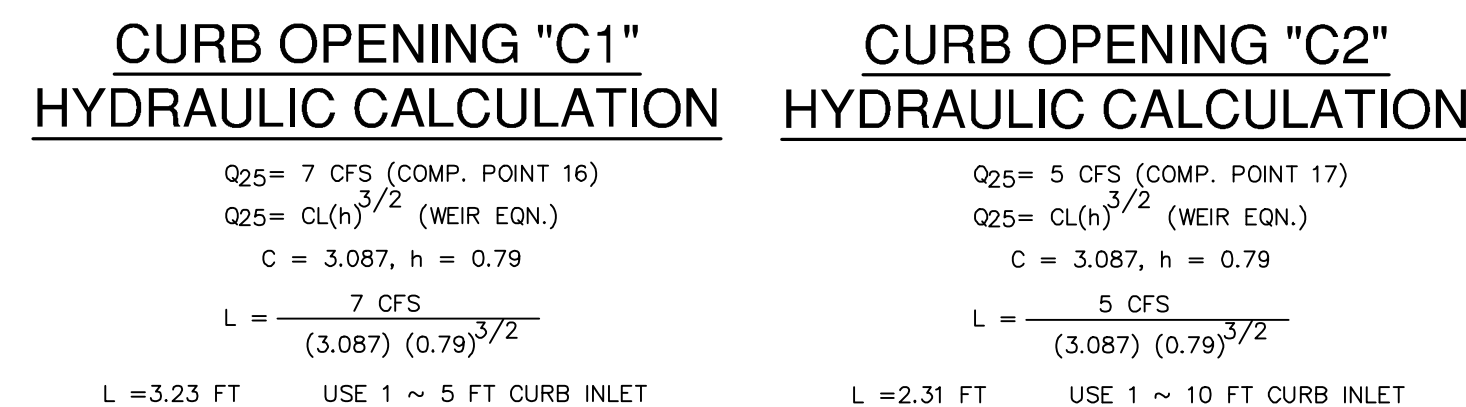
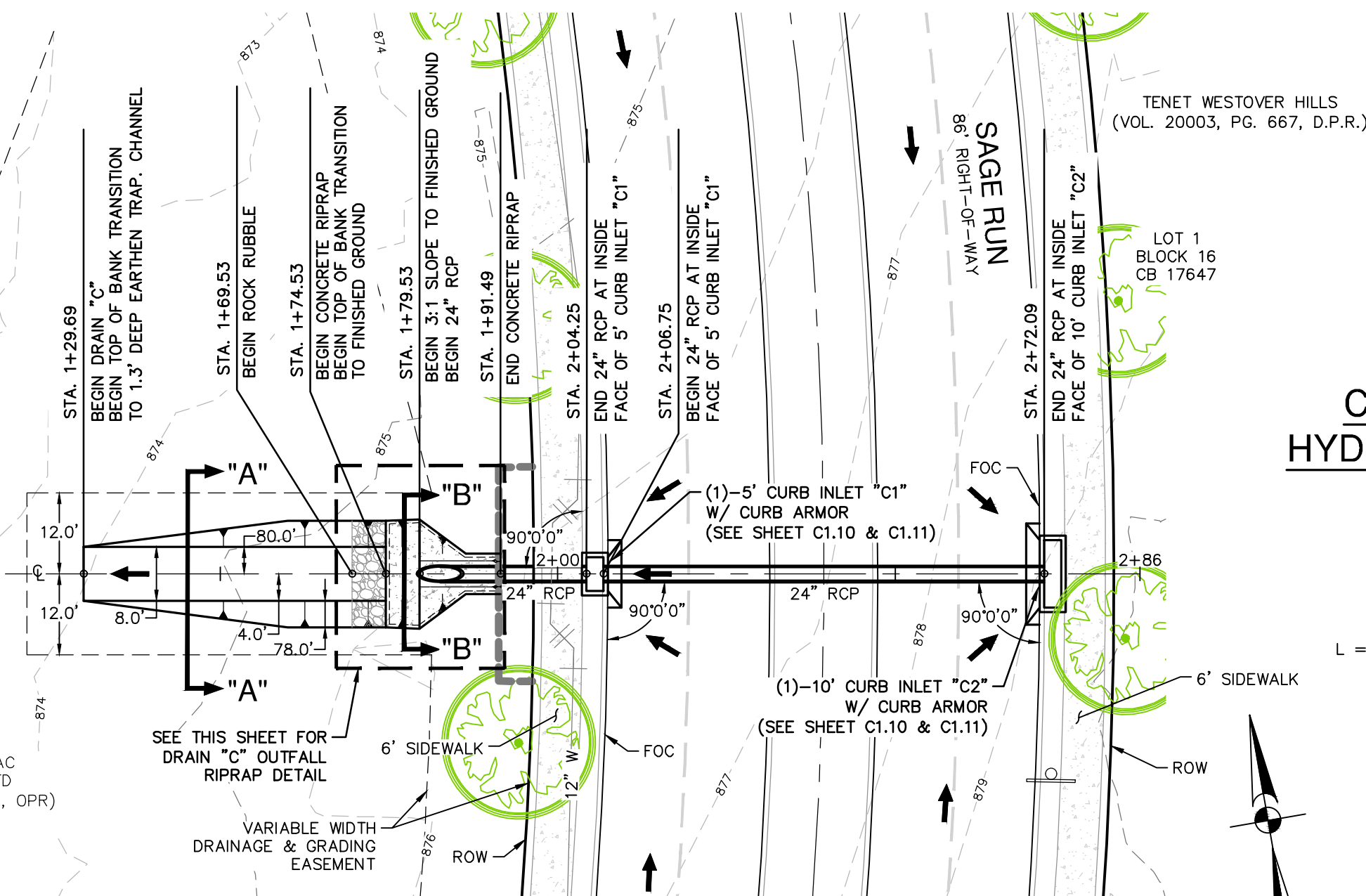
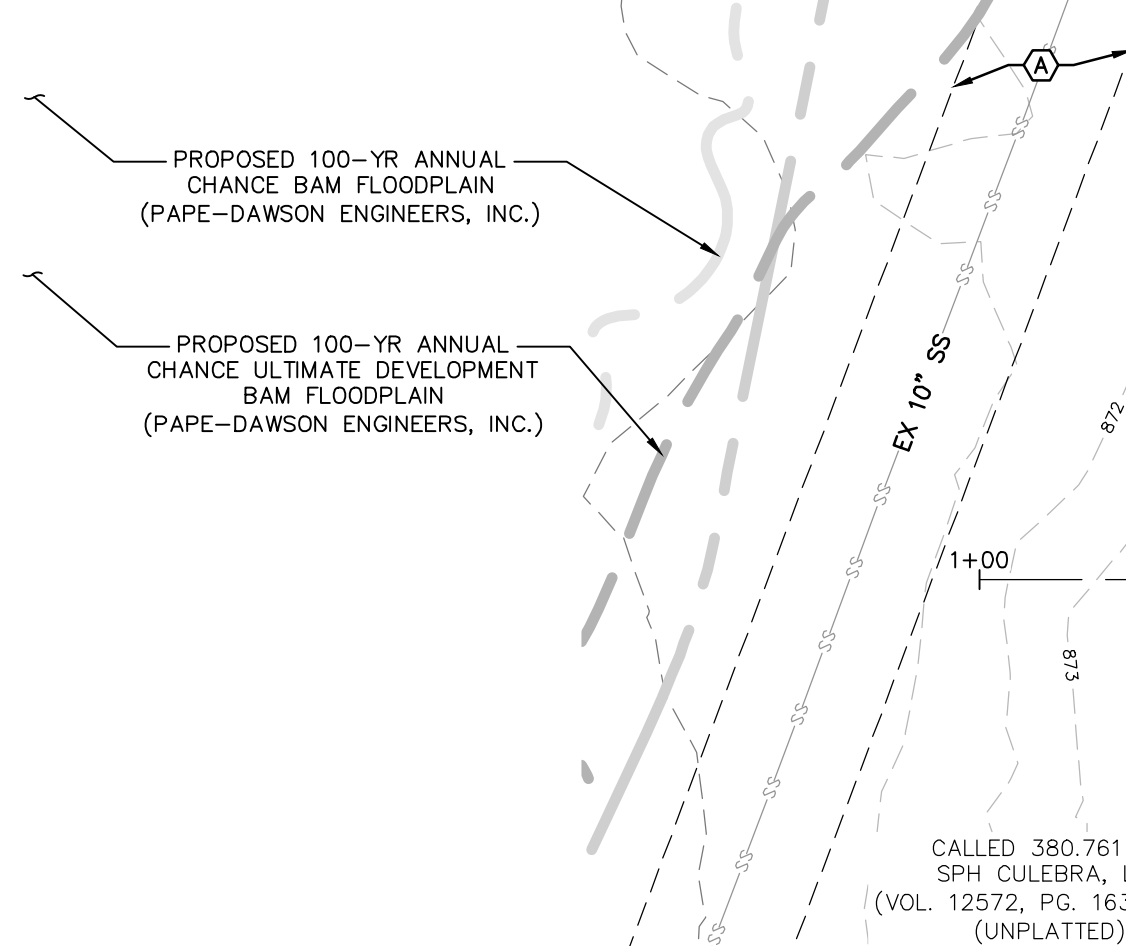
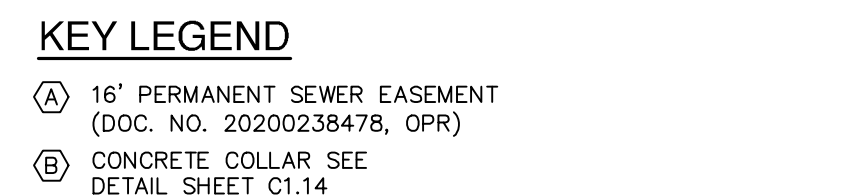


<p>Rational Method Time of Concentration</p> <p>*Seeley Chart or TR-55 Egn. 3-3</p> <p>**As Calculated using Mannings or TR-55 Figure 3-1 or 6 ft/s</p>	<p>From TR-55 Equation 3-3*</p> $T_o = \frac{(0.0007(nL)^{0.9})}{(62.2 \cdot S^4)} + 60$	<p>From TR-55 Figure 3-1**</p> $v = \frac{k}{n} R^{2/3} S_o^{1/2}$ $k = 1.486 \text{ ft}^{1/3}/\text{s}$
		<p>S: For Streets: $n = 0.018$, $R = 0.2$ (Adapted from Mannings)</p> <p>P: For Paved: $n = 0.025$, $R = 0.2$</p> <p>U: For Unpaved: $n = 0.05$, $R = 0.4$</p> <p>D: For Default: $v = 6 \text{ fps}$</p>



TYPICAL DRAINAGE CURB OPENING

NOT-TO-SCALE



- ## **DRAINAGE & GRADING NOTES:**
1. A BEAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEAR COUNTY ROW. THE CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
 2. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXISTING LOCATIONS OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE, LOCATION, MATERIAL, AND DEPTH. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.
 3. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 5000 PSI IN 28 DAYS.
 4. REFERENCE DRAINAGE DETAILS FOR PIPE, TRENCH DETAILS, BOX CULVERTS, ROADWAYS, AND CHANNELS. CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
 5. CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
 6. IMPROVED EARTHEN CHANNELS AND DETENTION PONDS WILL BE VEGETATED BY SEEDING OR SODDING. EIGHTY FIVE PERCENT (85%) OF THE CHANNEL SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT THE CHANNEL FOR MAINTENANCE.
 7. CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND SURFACE AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.

CONSTRUCTION NOTE

NO CONSTRUCTION AND/OR WASTE MATERIAL SHALL BE PLACED IN EXISTING LOWS THAT WILL BLOCK OR ALTER FLOW LIMITS OF EXISTING NATURAL DRAINAGE OR PLACED WITHIN THE LIMITS OF EXISTING FLOODPLAIN.

CAUTION!!

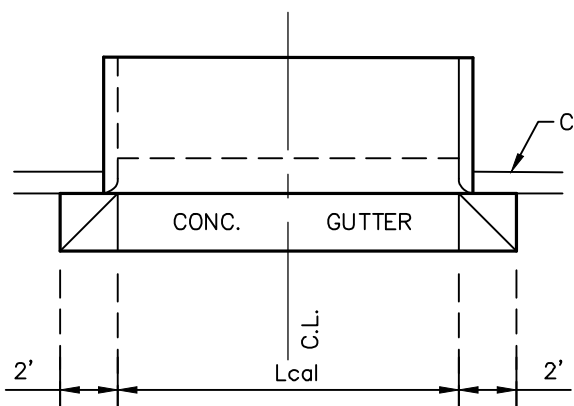
EXISTING UTILITIES ARE LOCATED WITHIN THE LIMITS OF THE CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR SHALL EXERCISE EXTRA CARE IN DIGGING ANY TRENCH FOR PROPOSED UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING, VERIFYING THE EXACT LOCATION AND IDENTIFYING ANY AREAS OF CONFLICTS WITH EXISTING UTILITIES AND WILL NOTIFY THE ENGINEER IMMEDIATELY IF CONFLICTS ARE FOUND.

CAUTION!!

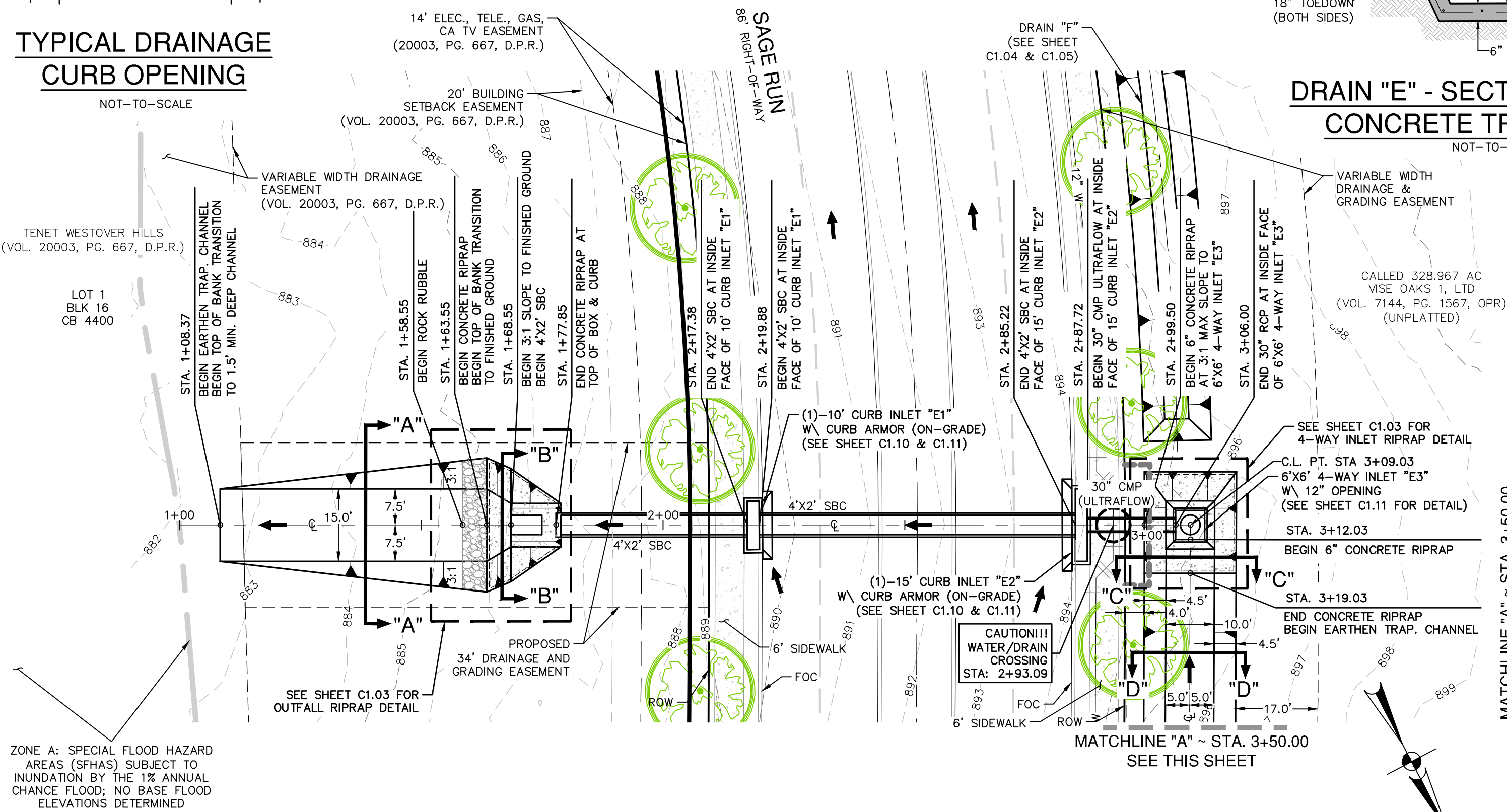
CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING, BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRICAL, SECONDARY ELECTRIC, PRIMARY ELECTRICAL, DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

TRENCH EXCAVATION SAFETY PROTECTION

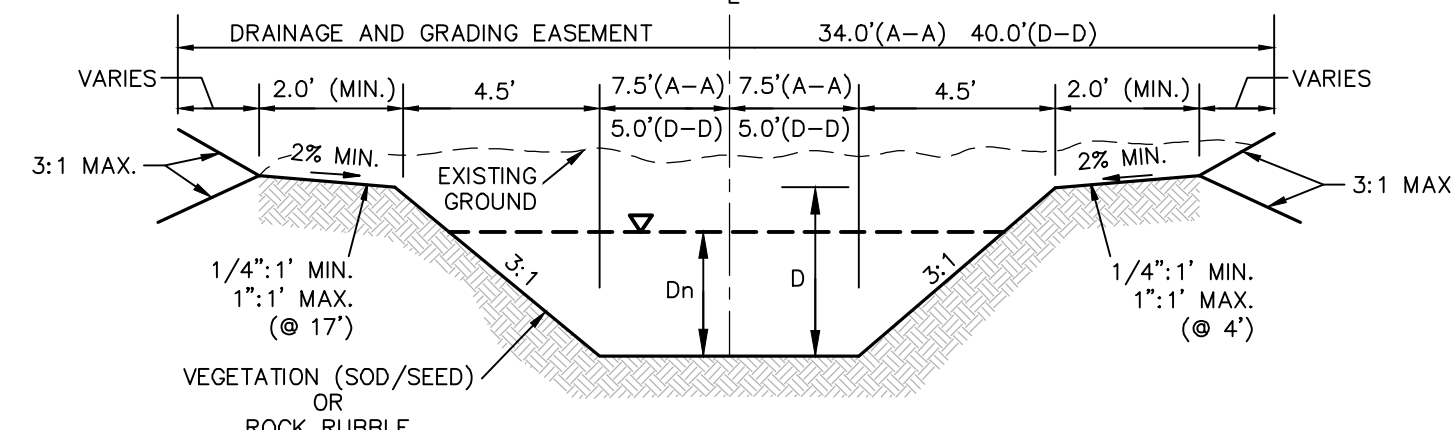
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT AREA TO DETERMINE THE NEED FOR TRENCH EXCAVATION, EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION. THE CONTRACTOR SHALL EMPLOY A COMPETENT PERSON FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA REGULATIONS AND THE MINIMUM SAFETY REQUIREMENTS OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.



TYPICAL DRAINAGE CURB OPENING



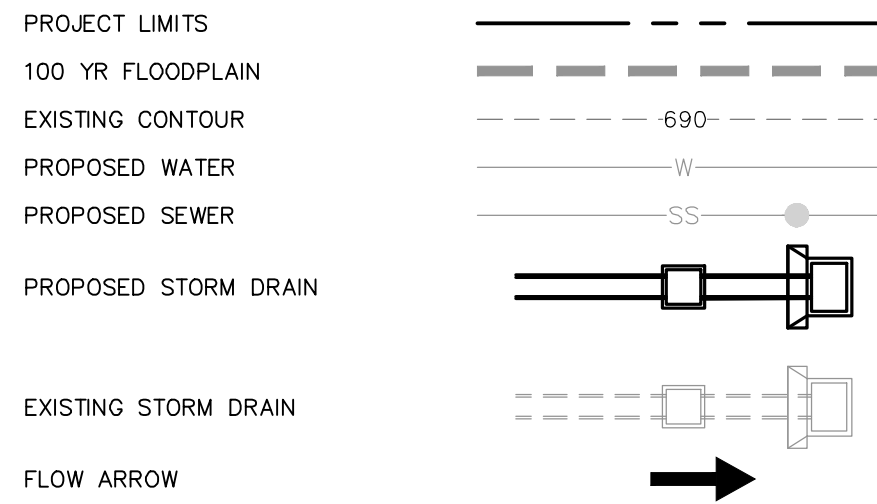
DRAIN "E" - SECTION "B-B" & "C-C" CONCRETE TRAP. CHANNEL



DRAIN "E" - SECTION "A-A" & "D-D" EARTHEN TRAP. CHANNEL

HYDRAULIC CALCULATIONS EARTH TRAP. CHANNEL SECTION "A-A"	HYDRAULIC CALCULATIONS ROCK TRAP. CHANNEL SECTION "A-A"	HYDRAULIC CALCULATIONS CONC. TRAP. CHANNEL SECTION "B-B"
STA. 1+08.37 TO 1+58.55	STA. 1+58.55 TO 1+63.55	STA. 1+63.55 TO 1+77.85
Q25 = 84 CFS	Q25 = 84 CFS	Q25 = 84 CFS
Bw = 15.00 FT	Bw = 15.00 FT	Bw = 15.00 FT
n = 0.035	n = 0.038	n = 0.015
S = 1.80%	S = 1.80%	S = 1.80%
Dn = 0.96 FT	Dn = 1.00 FT	Dn = 0.59 FT
Vn = 4.89 FPS	Vn = 4.67 FPS	Vn = 8.49 FPS
D = 1.5 FT	D = 1.5 FT	D = 1.5 FT

DRAINAGE LEGEND



KEY LEGEND

CONCRETE COLLAR SEE DETAIL SHEET C1.14

HYDRAULIC CALCULATIONS CONC. TRAP. CHANNEL SECTION "C-C"	HYDRAULIC CALCULATIONS EARTH TRAP. CHANNEL SECTION "D-D"
STA. 3+12.03 TO 3+19.03	STA. 4+80.00 TO 5+60.00
Q25 = 64 CFS	Q25 = 64 CFS
Bw = 10.00 FT	Bw = 10.00 FT
n = 0.015	n = 0.035
S = 1.40%	S = 3.00%
Dn = 0.67 FT	Dn = 0.87 FT
Vn = 7.95 FPS	Vn = 5.83 FPS
D = 1.5 FT	D = 1.5 FT

HYDRAULIC CALCULATIONS EARTH TRAP. CHANNEL SECTION "D-D"
STA. 3+19.03 TO 4+80.00
Q25 = 64 CFS
Bw = 10.00 FT
n = 0.035
S = 1.85%
Dn = 1.00 FT
Vn = 4.92 FPS
D = 1.5 FT

4-WAY INLET "E3" HYDRAULIC CALCULATIONS
 $Q = 64 \text{ CFS (CP 6)}$
 $Q = Cw(h)^{3/2}$
 $(Q/Cw)^{2/3} = (h)$
 $h = (64/(3.087)(24))^{2/3}$
 $h = 0.91'$
USE $h = 1.0'$

CURB INLET E1 HYDRAULIC CALCULATIONS
 $Q_{25} = 11 \text{ CFS}$
 $z = 0.60$
 $n = 0.018$
 $S = 0.02 \text{ FT/FT}$
 $S_u = 0.067 \text{ FT/FT}$
 $L = zQ^{0.45}S^{0.5} \left(\frac{1}{nS} \right)^{0.60}$
 $L = (0.60)(11)^{0.45}(0.02)^{0.5} \left(\frac{1}{(0.018)(0.067)} \right)^{0.60}$
 $L_{REQUIRED} = 29 \text{ FT}$
 $L_{USED} = 10 \text{ FT}$
 $Q_{CARRY OVER} = 5 \text{ CFS}$
 $Q_{CAPTURED} = 6 \text{ CFS}$
USE (1) - 10' CURB INLET

CURB INLET E2 HYDRAULIC CALCULATIONS
 $Q_{25} = 12 \text{ CFS}$
 $z = 0.60$
 $n = 0.018$
 $S = 0.02 \text{ FT/FT}$
 $S_u = 0.065 \text{ FT/FT}$
 $L = zQ^{0.45}S^{0.5} \left(\frac{1}{nS} \right)^{0.60}$
 $L = (0.60)(12)^{0.45}(0.02)^{0.5} \left(\frac{1}{(0.018)(0.065)} \right)^{0.60}$
 $L_{REQUIRED} = 30 \text{ FT}$
 $L_{USED} = 15 \text{ FT}$
 $Q_{CARRY OVER} = 3 \text{ CFS}$
 $Q_{CAPTURED} = 9 \text{ CFS}$
USE (1) - 15' CURB INLET

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- ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI IN 28 DAYS.
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- IMPROVED EARTHEN CHANNELS AND DETENTION PONDS WILL BE VEGETATED BY SEEDING OR SODDING. EIGHTY FIVE PERCENT (85%) OF THE CHANNEL SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT THE CHANNEL FOR MAINTENANCE.
- CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.

BEXAR COUNTY FLOODPLAIN GENERAL CONSTRUCTION NOTE

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CAUTION!!

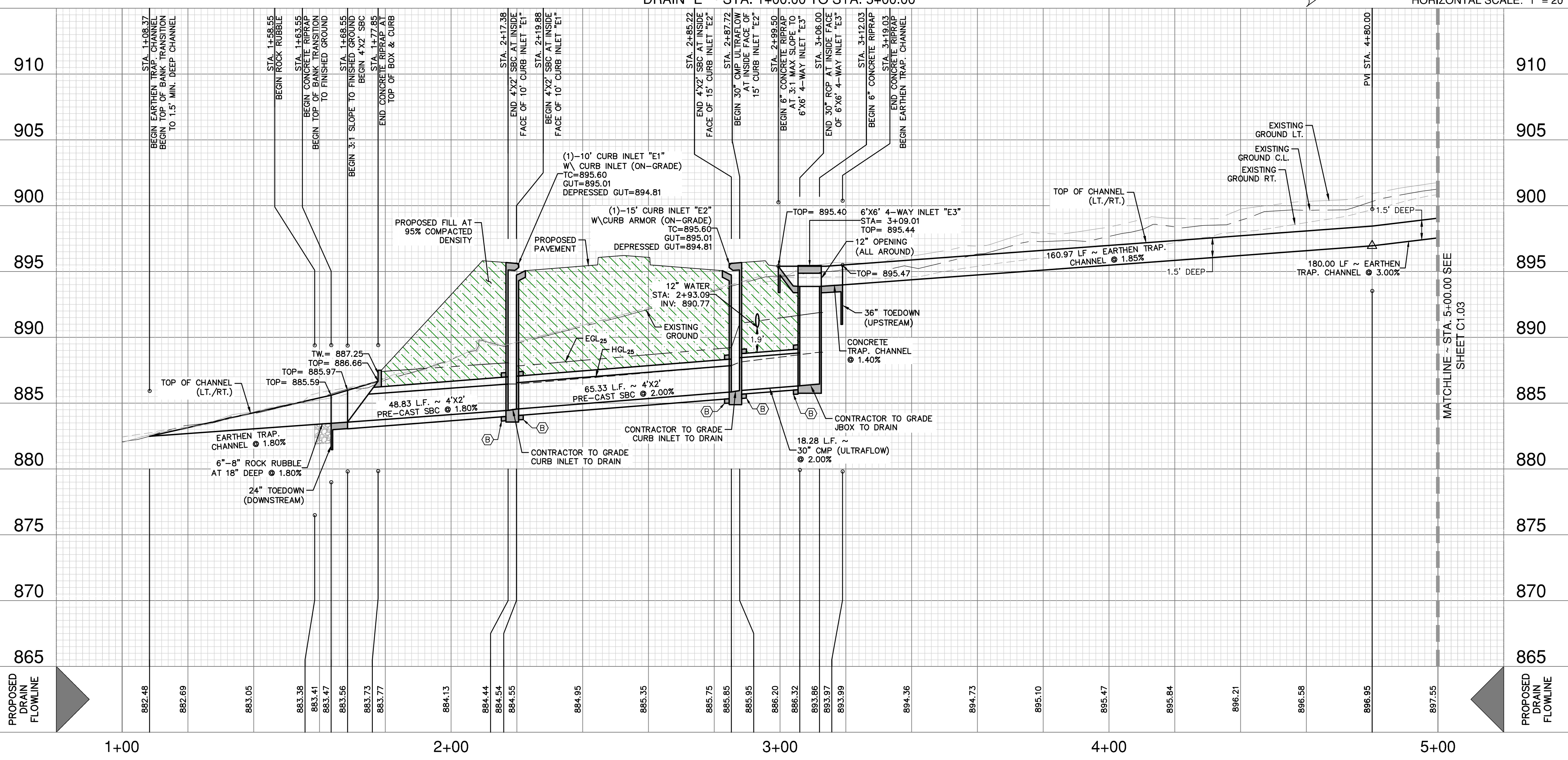
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CAUTION!!

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TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOGRAPHIC INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.



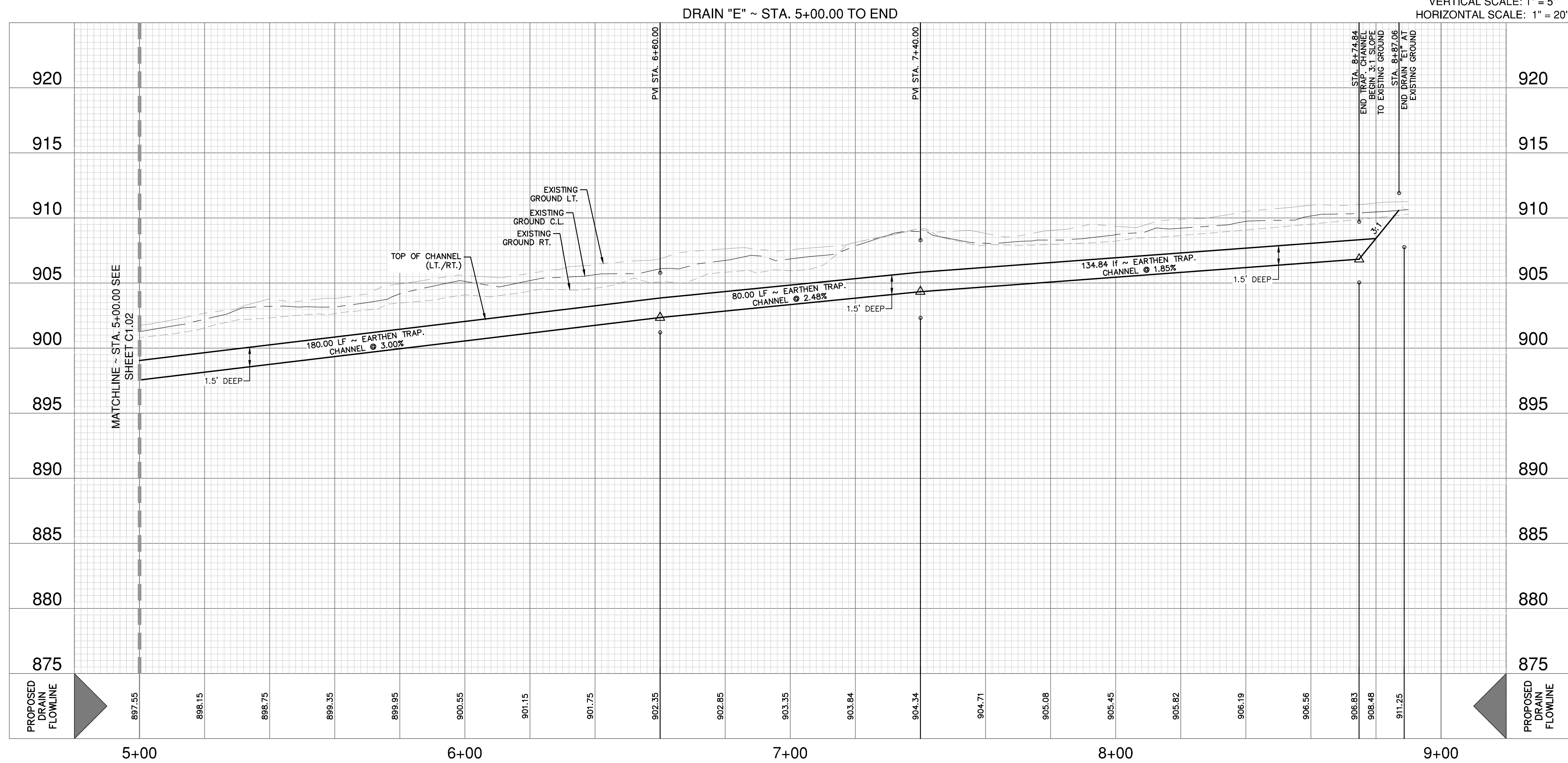
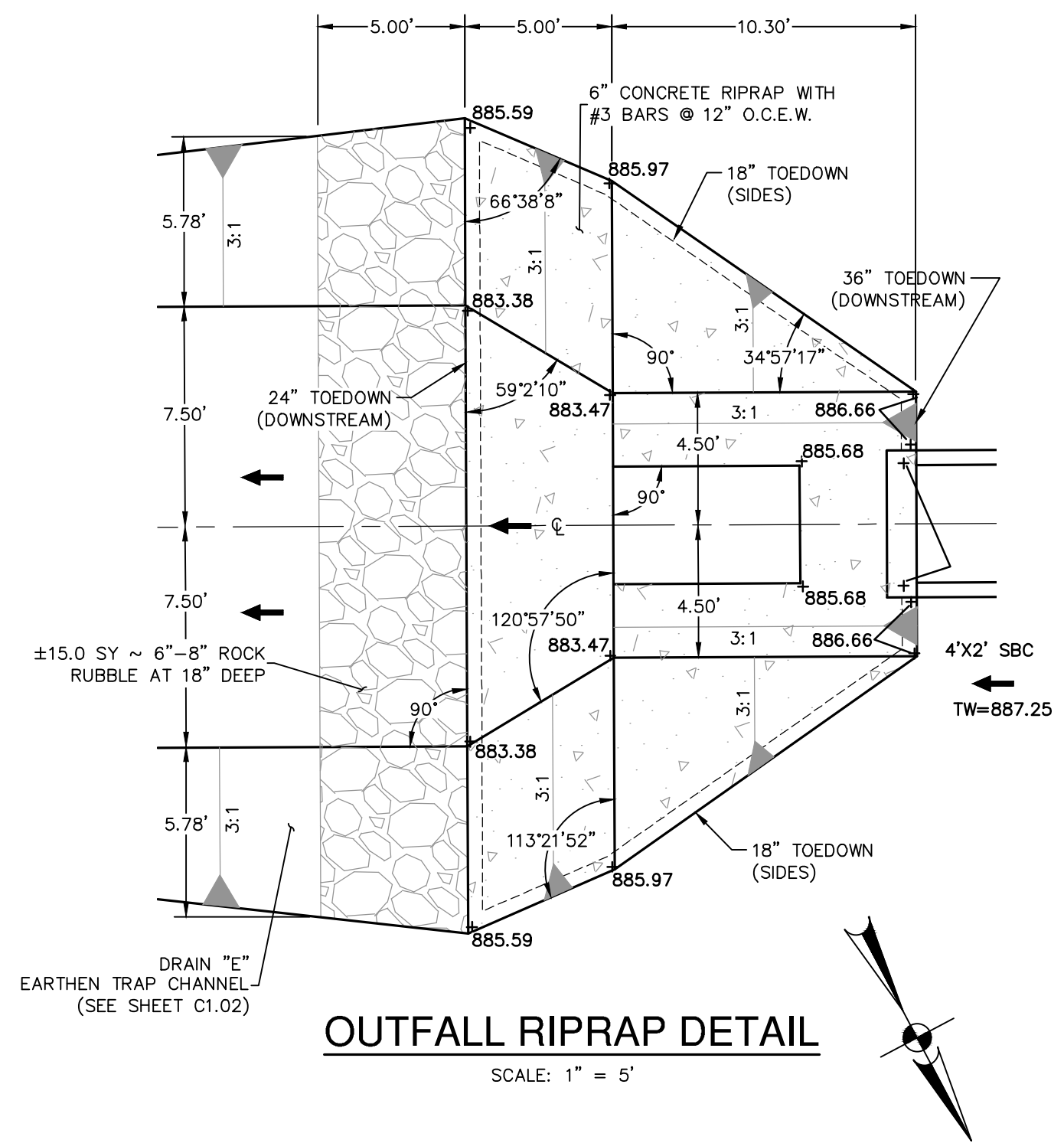
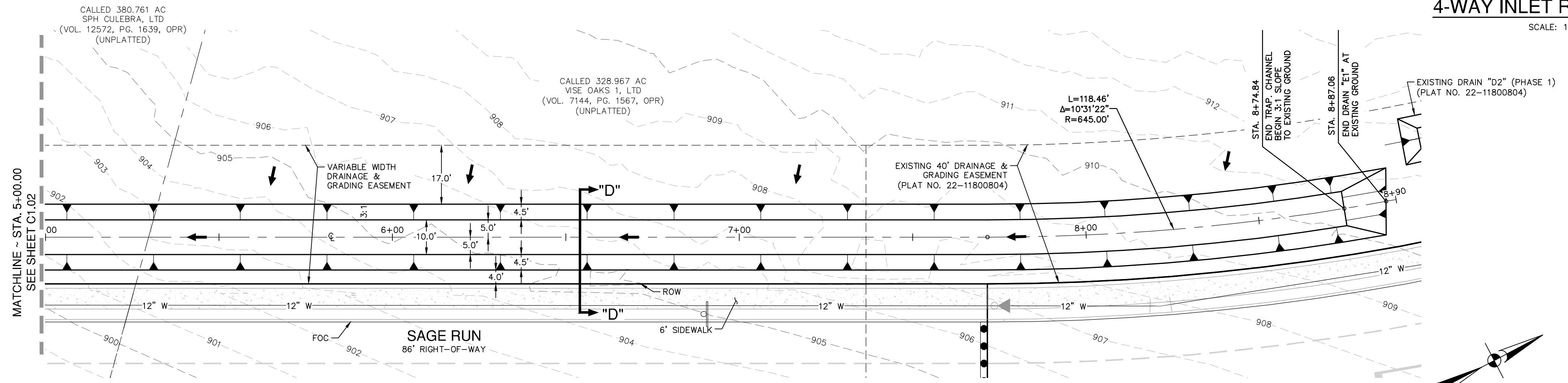
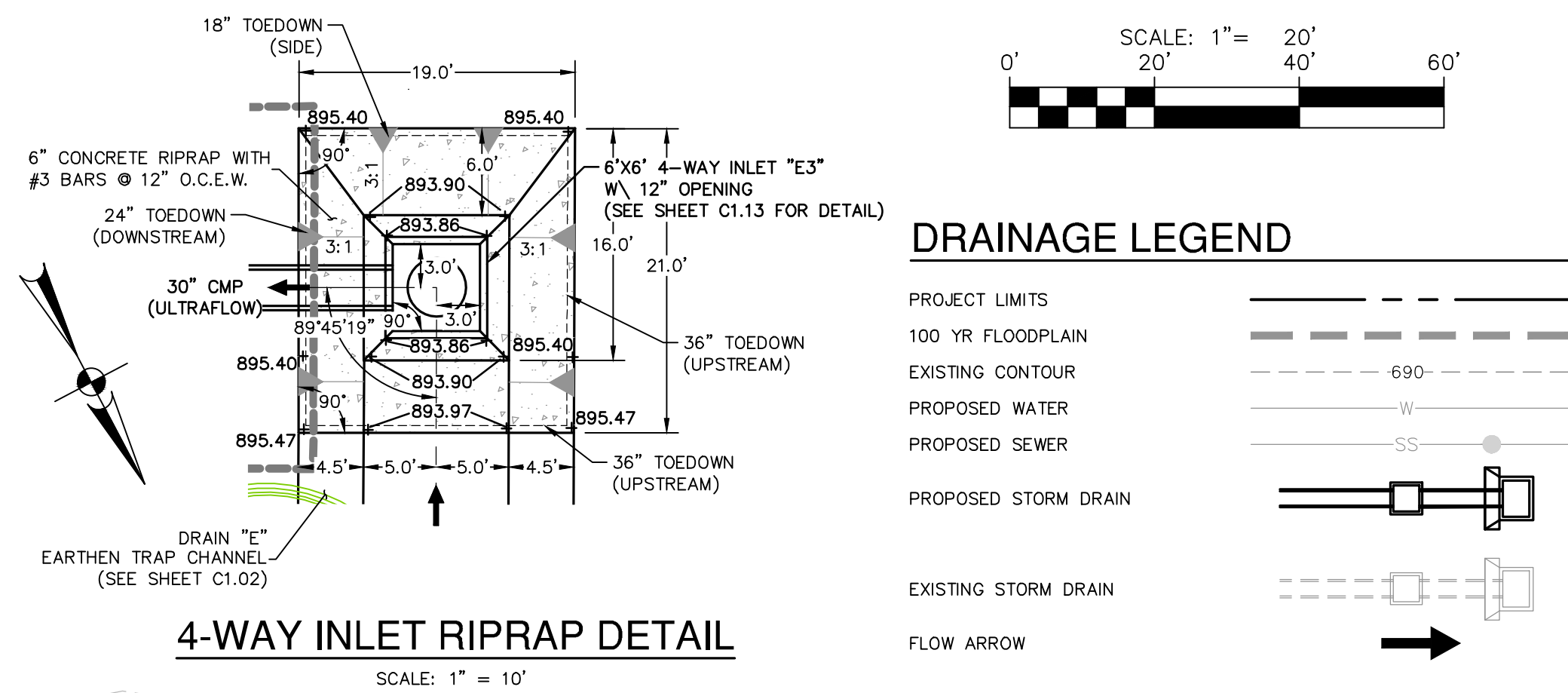
PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #1008860

SAGE RUN, PHASE-2
SAN ANTONIO, TEXAS
DRAIN "E" ~ STA. 1+00.00 TO STA. 5+00.00
DRAIN PLAN & PROFILE

PLAT NO. 22-11800755
JOB NO. 12431-01
DATE FEBRUARY 2024
DESIGNER JS
CHECKED VS DRAWN JS
SHEET C1.02



HYDRAULIC CALCULATIONS <u>EARTH TRAP, CHANNEL SECTION "D-D"</u> STA. 4+80.00 TO 6+60.00	HYDRAULIC CALCULATIONS <u>EARTH TRAP, CHANNEL SECTION "D-D"</u> STA. 6+60.00 TO 7+40.00	HYDRAULIC CALCULATIONS <u>EARTH TRAP, CHANNEL SECTION "D-D"</u> STA. 7+40.00 TO END
Q25 = 64 CFS	Q25 = 64 CFS	Q25 = 64 CFS
Bw = 10.00 FT	Bw = 10.00 FT	Bw = 10.00 FT
n = 0.035	n = 0.035	n = 0.035
S = 3.00%	S = 2.48%	S = 1.85%
Dn = 0.87 FT	Dn = 0.92 FT	Dn = 1.00 FT
Vn = 5.83 FPS	Vn = 5.45 FPS	Vn = 4.92 FPS
D = 1.5 FT	D = 1.5 FT	D = 1.5 FT



- ## **DRAINAGE & GRADING NOTES:**
1. A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
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 3. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI IN 28 DAYS.
 4. REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
 5. CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
 6. IMPROVED EARTHEN CHANNELS AND DETENTION PONDS WILL BE VEGETATED BY SEEDING OR SODDING. EIGHTY FIVE PERCENT (85%) OF THE CHANNEL SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT THE CHANNEL FOR MAINTENANCE.
 7. CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.

BEXAR COUNTY FLOODPLAIN GENERAL CONSTRUCTION NOTE

NO CONSTRUCTION AND/OR WASTE MATERIAL SHALL BE PLACED IN EXISTING LOWS THAT WILL BLOCK OR ALTER FLOW LIMITS OF EXISTING NATURAL DRAINAGE OR PLACED WITHIN THE LIMITS OF EXISTING FLOODPLAIN.

CAUTION!!

EXISTING UTILITIES ARE LOCATED WITHIN THE LIMITS OF THE CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR SHALL EXERCISE EXTRA CARE IN DIGGING ANY TRENCH FOR PROPOSED UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING, VERIFYING THE EXACT LOCATION AND IDENTIFYING ANY AREAS OF CONFLICTS WITH EXISTING UTILITIES AND WILL NOTIFY THE ENGINEER IMMEDIATELY IF CONFLICTS ARE FOUND.

CAUTION!!

CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES. SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE FROM THE CONSTRUCTION OF THE PROJECT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL CONTACT 800-DIGIT-1235 A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE. WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO DETERMINE CONFORMANCE WITH THE FOLLOWING TRENCH EXCAVATION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH EXCAVATION SAFETY PROGRAM THAT COMPLY WITH ALL OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

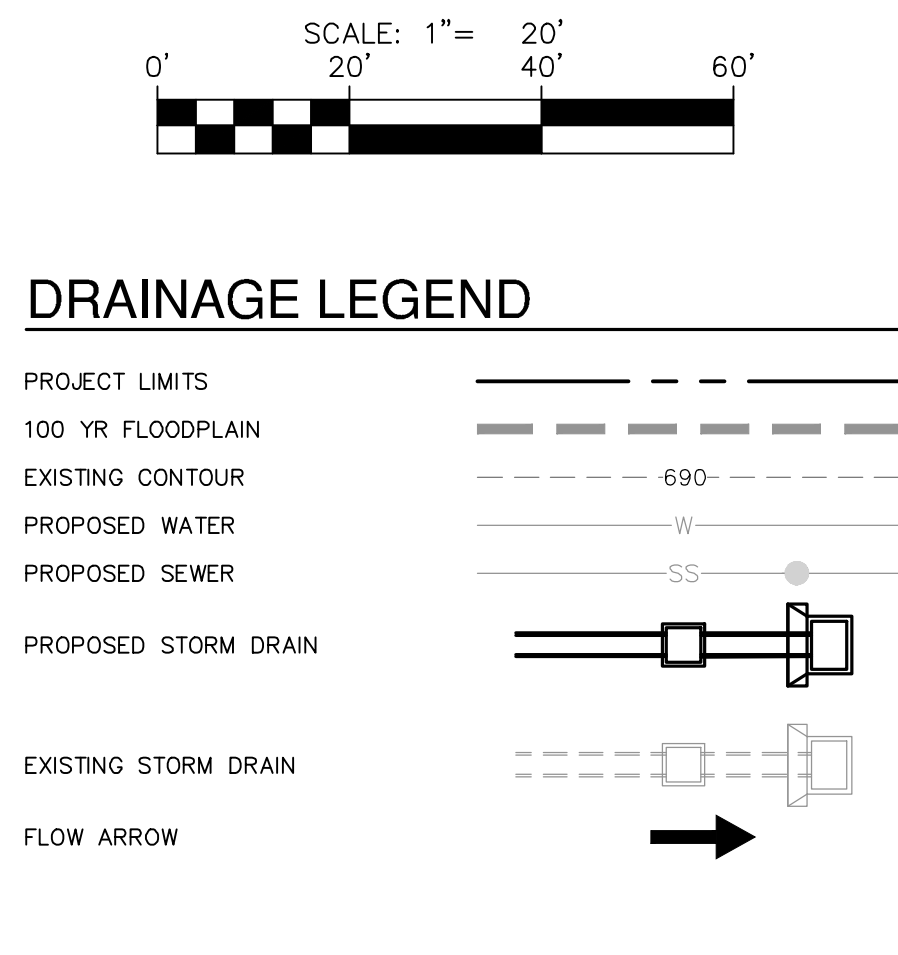
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PAPE-DAWSON
ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

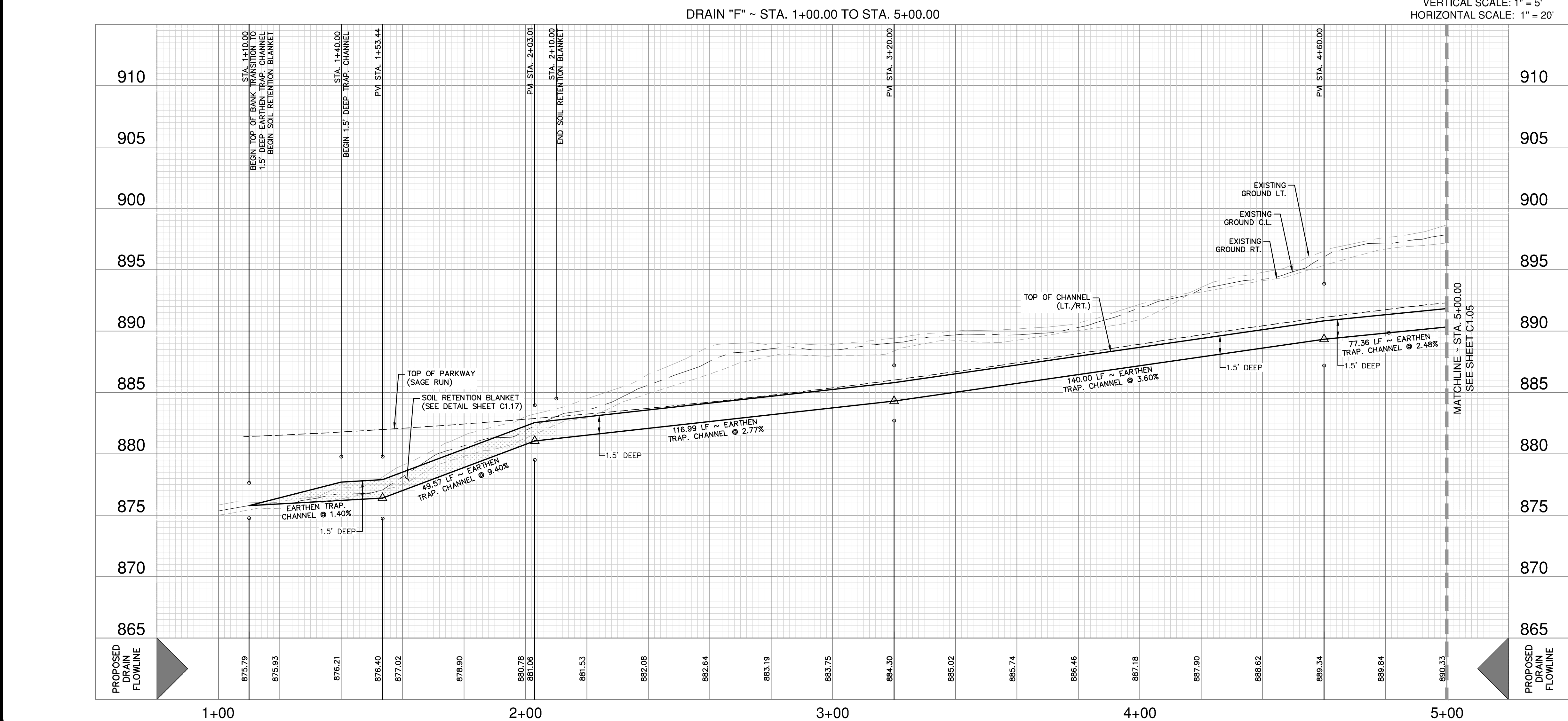
SAGE RUN, PHASE-2
SAN ANTONIO, TEXAS

PLAT NO. 22-11800755
 JOB NO. 12431-01
 DATE FEBRUARY 2024
 DESIGNER JS
 CHECKED VS DRAWN JS
 SHEET C1.03



HYDRAULIC CALCULATIONS EARTH TRAP. CHANNEL SECTION "A-A"	HYDRAULIC CALCULATIONS EARTH TRAP. CHANNEL SECTION "A-A"	HYDRAULIC CALCULATIONS EARTH TRAP. CHANNEL SECTION "A-A"	HYDRAULIC CALCULATIONS EARTH TRAP. CHANNEL SECTION "A-A"	HYDRAULIC CALCULATIONS EARTH TRAP. CHANNEL SECTION "A-A"
STA. 1+10.00 TO 1+53.44	STA. 1+53.44 TO 2+03.01	STA. 2+03.01 TO 3+20.00	STA. 3+20.00 TO 4+60.00	STA. 4+60.00 TO 5+37.36
Q25 = 35 CFS	Q25 = 35 CFS	Q25 = 35 CFS	Q25 = 35 CFS	Q25 = 35 CFS
Bw = 8.00 FT	Bw = 8.00 FT	Bw = 8.00 FT	Bw = 8.00 FT	Bw = 8.00 FT
n = 0.035	n = 0.035	n = 0.035	n = 0.035	n = 0.035
S = 1.40%	S = 9.40%	S = 2.77%	S = 3.60%	S = 2.48%
Dn = 0.86 FT	Dn = 0.51 FT	Dn = 0.71 FT	Dn = 0.66 FT	Dn = 0.74 FT
Vn = 3.85 FPS	Vn = *7.20 FPS	Vn = 4.87 FPS	Vn = 5.31 FPS	Vn = 4.63 FPS
D = 1.5 FT	D = 1.5 FT	D = 1.5 FT	D = 1.5 FT	D = 1.5 FT

*NOTE: CONTRACTOR TO INSTALL SOIL RETENTION BLANKET BETWEEN STA. 1+10.00 TO STA. 2+10.00 MUST USE CURLEX DOUBLE NET (CURLEX II), WHICH IS APPROVED FOR VELOCITIES GREATER THAN 7.0 FPS.
(SEE DETAIL SHEET C1.17)



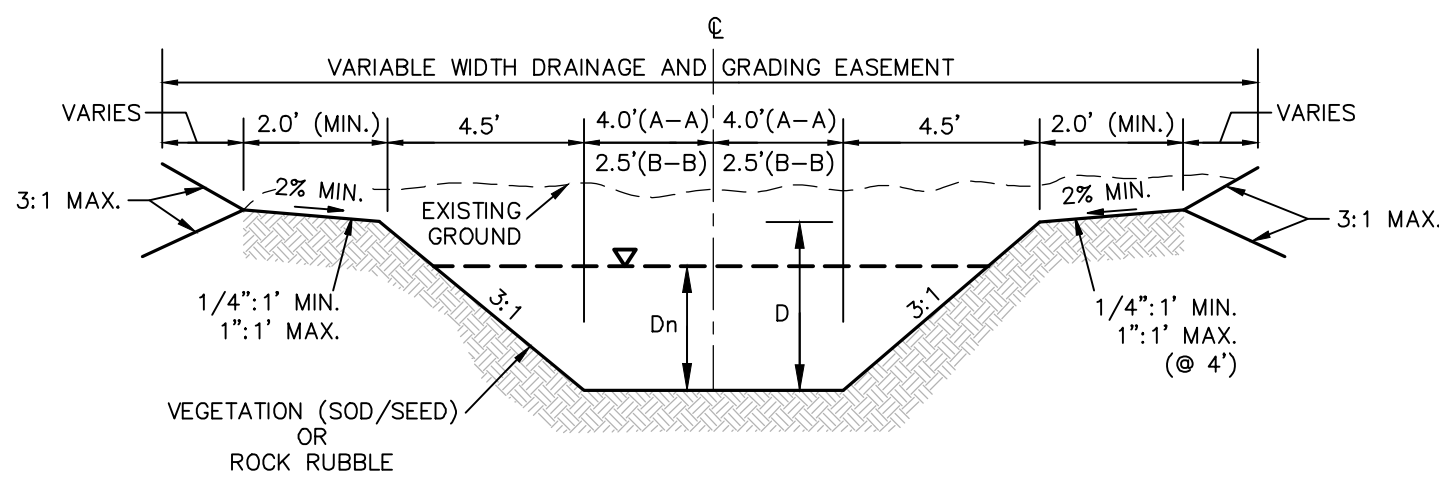
1. A BEAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN WITH THE BEAR COUNTY ENGINEER. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
2. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER EXISTING OR NOT. THE CONTRACTOR SHALL UNCOVER ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE, AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DAMAGE TO EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.
3. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI IN 28 DAYS.
4. REFERENCE DRAWING DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
5. CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
6. IMPROVED EARTHEN CHANNELS AND DETENTION PONDS WILL BE VEGETATED BY SEEDING OR SODDING. EIGHTY FIVE PERCENT (85%) OF THE CHANNEL SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT THE CHANNEL FOR MAINTENANCE.
7. CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND SURFACE AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.

NO CONSTRUCTION AND/OR WASTE MATERIAL SHALL BE PLACED IN EXISTING
LOWS THAT WILL BLOCK OR ALTER FLOW LIMITS OF EXISTING NATURAL
DRAINAGE OR PLACED WITHIN THE LIMITS OF EXISTING FLOODPLAIN.

EXISTING UTILITIES ARE LOCATED WITHIN THE LIMITS OF THE CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR SHALL EXERCISE EXTRA CARE IN DIGGING ANY TRENCH FOR PROPOSED UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING, VERIFYING THE EXACT LOCATION AND IDENTIFYING ANY AREAS OF CONFLICTS WITH EXISTING UTILITIES AND WILL NOTIFY THE ENGINEER IMMEDIATELY IF CONFLICTS ARE FOUND.

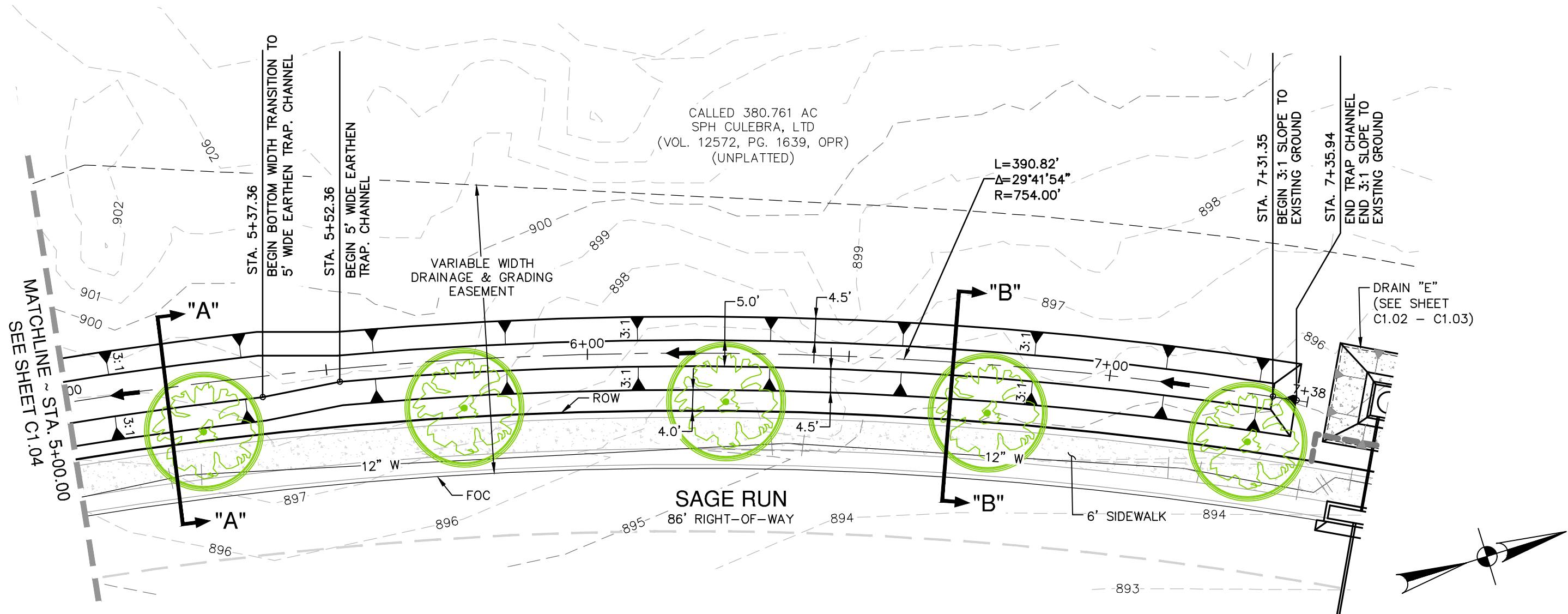
CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRICAL, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT A 300-DIG TESS AT A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ASSOCIATED INSTALLATION WITHIN THE EXCAVATION AREA AND ORDER TO OBTAIN CONTRACTOR'S REVIEW OF THE EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY CONSULTATION TO ALL MINIMUM TRENCH DEPTHS REQUIRED FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS REGARDING THE ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATIONS.



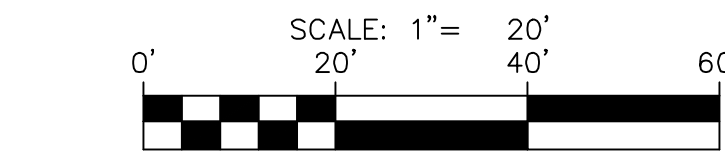
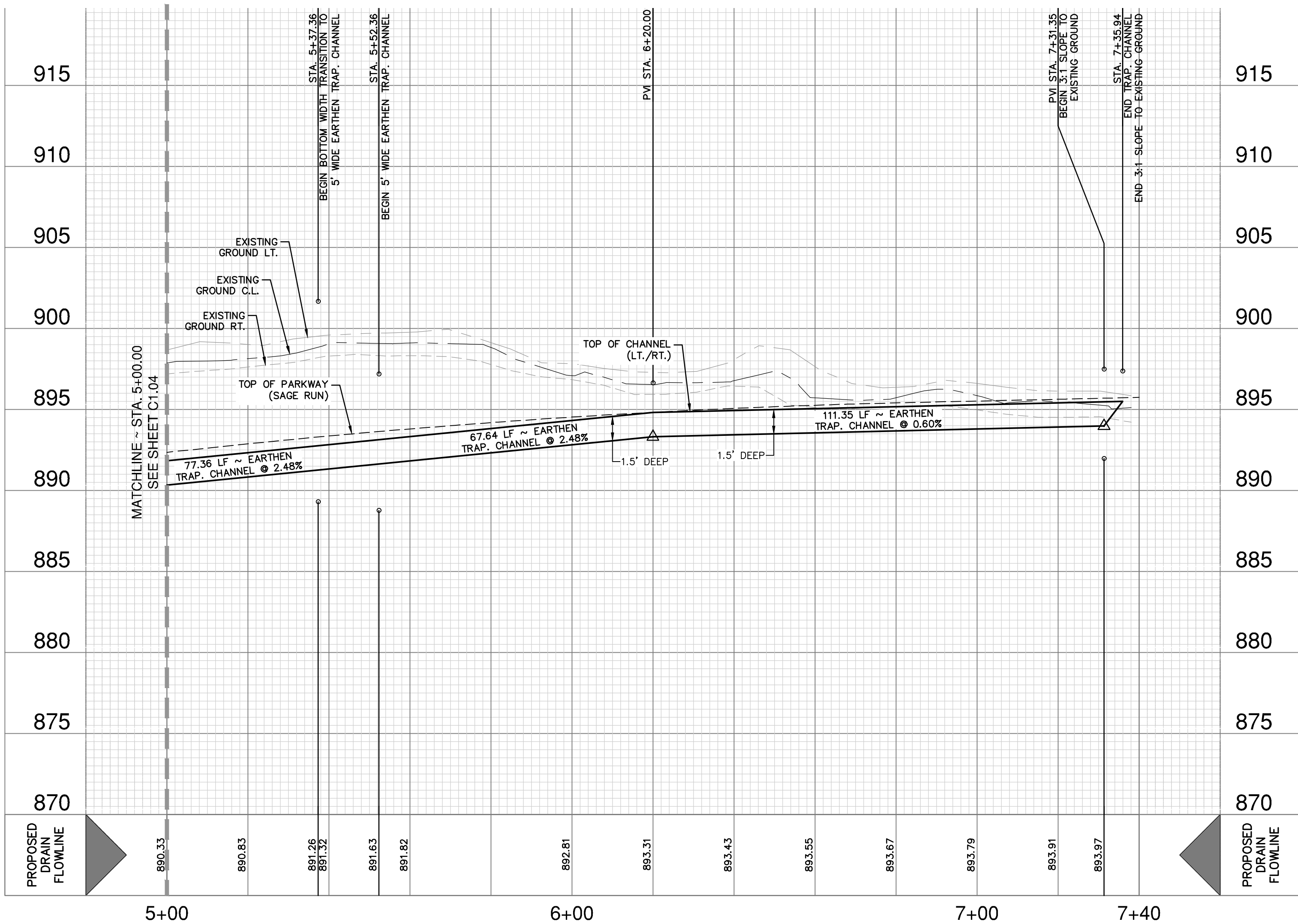
DRAIN "F" - SECTION "A-A" & "B-B"
EARTHEN TRAP. CHANNEL
NOT-TO-SCALE

HYDRAULIC CALCULATIONS EARTH TRAP. CHANNEL SECTION "A-A"	HYDRAULIC CALCULATIONS EARTH TRAP. CHANNEL SECTION "B-B"	HYDRAULIC CALCULATIONS EARTH TRAP. CHANNEL SECTION "B-B"
STA. 4+60.00 TO 5+37.36	STA. 5+37.36 TO 6+20.00	STA. 6+20.00 TO END
Q25 = 35 CFS	Q25 = 18 CFS	Q25 = 18 CFS
Bw = 8.00 FT	Bw = 5.00 FT	Bw = 5.00 FT
n = 0.035	n = 0.035	n = 0.035
S = 2.48%	S = 2.48%	S = 0.60%
Dn = 0.74 FT	Dn = 0.64 FT	Dn = 0.93 FT
Vn = 4.63 FPS	Vn = 4.06 FPS	Vn = 2.48 FPS
D = 1.5 FT	D = 1.5 FT	D = 1.5 FT

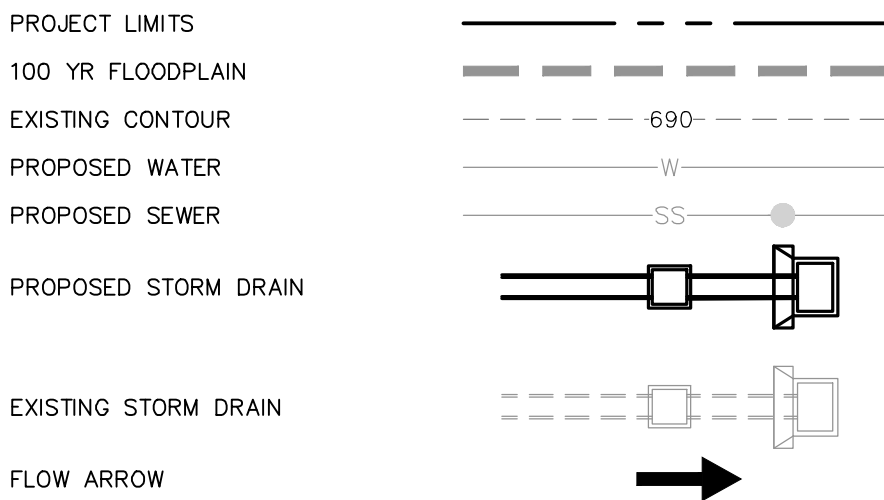


DRAIN "F" ~ STA. 5+00.00 TO END

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 20'



DRAINAGE LEGEND



DRAINAGE & GRADING NOTES:

- A BEXAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE, AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.
- ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI IN 28 DAYS.
- REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
- CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
- IMPROVED EARTHEN CHANNELS AND DETENTION PONDS WILL BE VEGETATED BY SEEDING OR SODDING. EIGHTY FIVE PERCENT (85%) OF THE CHANNEL SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT THE CHANNEL FOR MAINTENANCE.
- CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.

BEXAR COUNTY FLOODPLAIN GENERAL
CONSTRUCTION NOTE

NO CONSTRUCTION AND/OR WASTE MATERIAL SHALL BE PLACED IN EXISTING LOWS THAT WILL BLOCK OR ALTER FLOW LIMITS OF EXISTING NATURAL DRAINAGE OR PLACED WITHIN THE LIMITS OF EXISTING FLOODPLAIN.

CAUTION!!

EXISTING UTILITIES ARE LOCATED WITHIN THE LIMITS OF THE CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR SHALL EXERCISE EXTRA CARE IN DIGGING ANY TRENCH FOR PROPOSED UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING, VERIFYING THE EXACT LOCATION AND IDENTIFYING ANY AREAS OF CONFLICTS WITH EXISTING UTILITIES AND WILL NOTIFY THE ENGINEER IMMEDIATELY IF CONFLICTS ARE FOUND.

CAUTION!!

CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND L/ OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/ OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

DATE: 3/22/24

NO. REVISION

STATE OF TEXAS
TAYLOR GLENN DAWSON
128537
LICENSED PROFESSIONAL ENGINEER

**PAPE-DAWSON
ENGINEERS**

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #170 | TEXAS SURVEYING FIRM #10028800

SAGE RUN, PHASE-2
SAN ANTONIO, TEXAS

DRAIN "F" ~ STA. 5+00.00 TO END
DRAIN PLAN & PROFILE

PLAT NO. 22-11800755

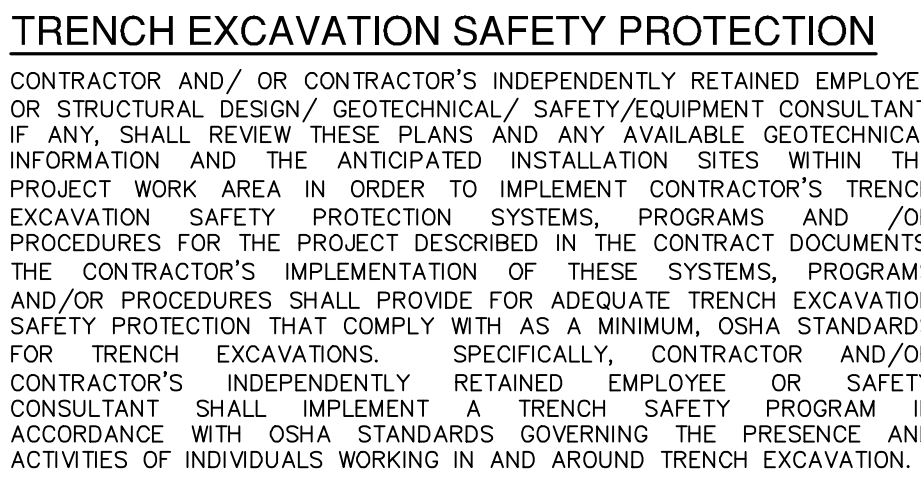
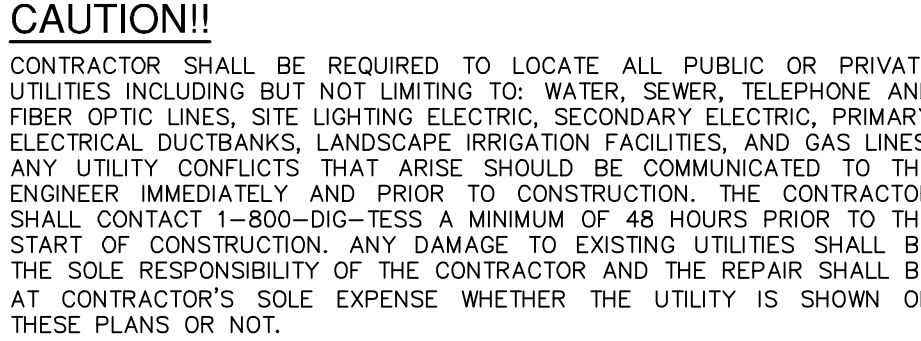
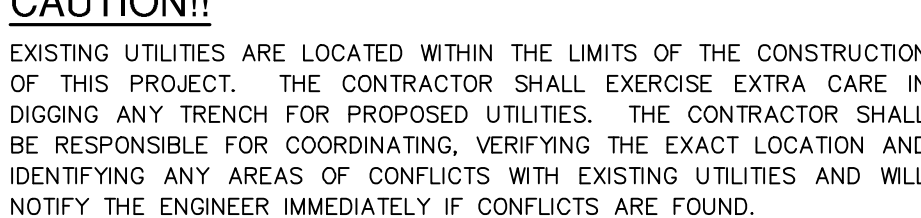
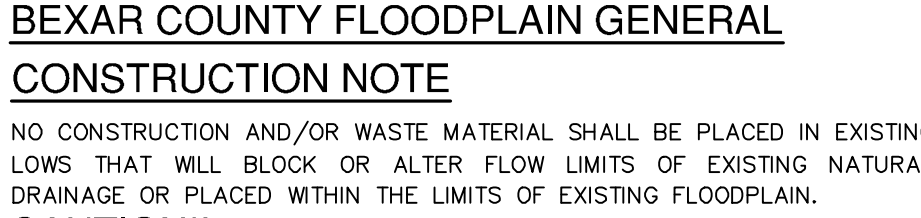
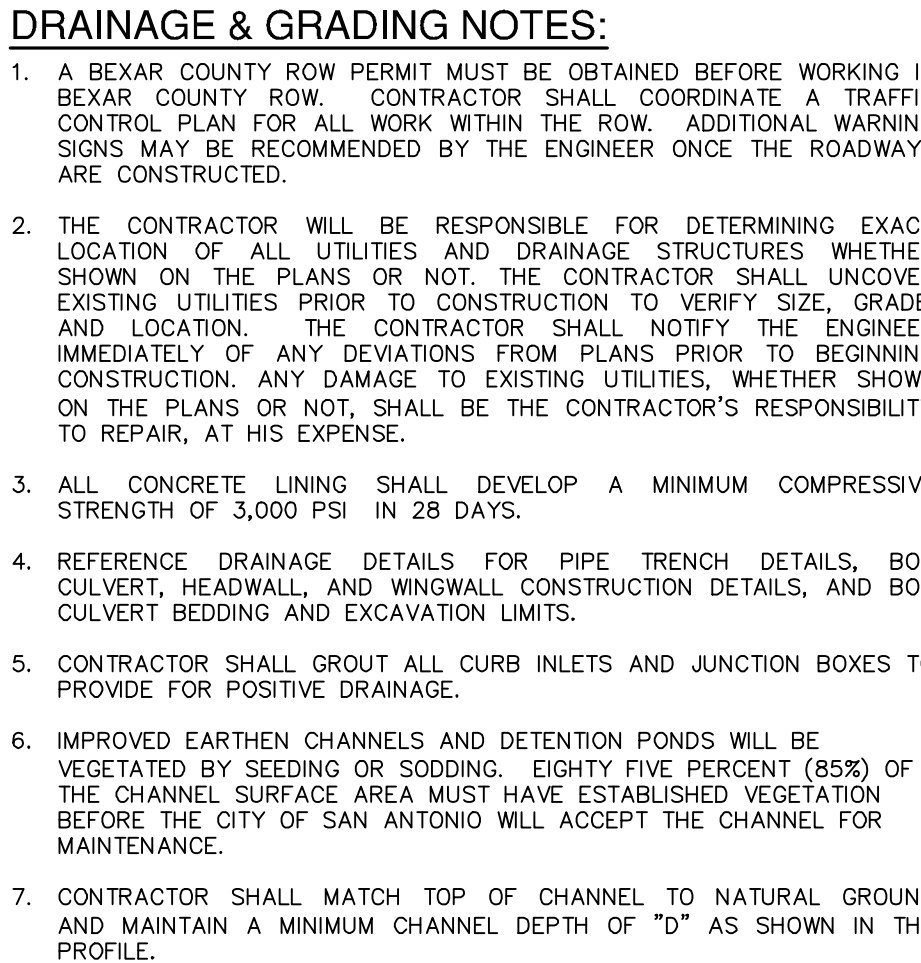
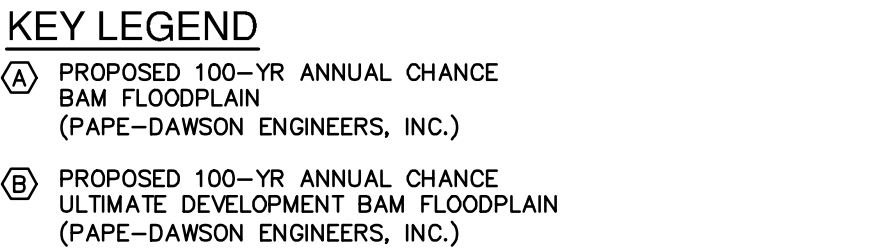
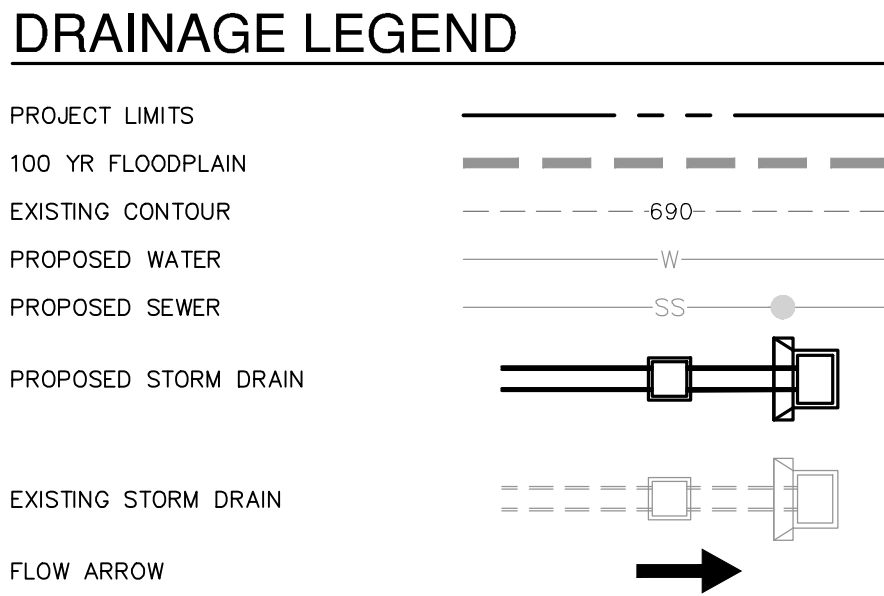
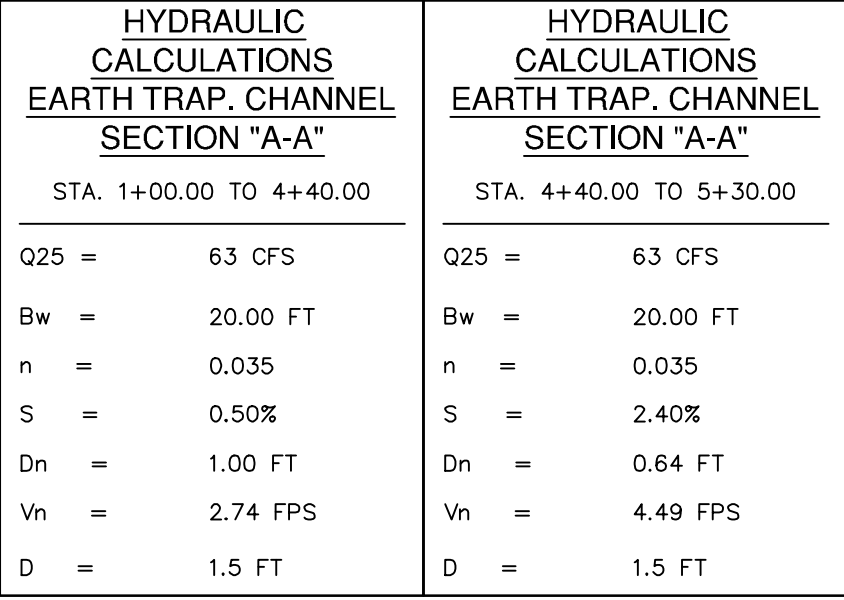
JOB NO. 12431-01

DATE FEBRUARY 2024

DESIGNER CB

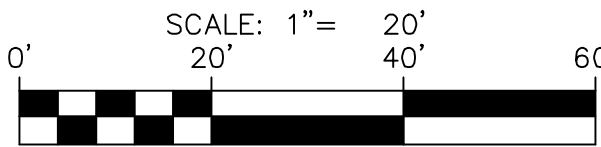
CHECKED VS DRAWN CB

SHEET C1.05





HYDRAULIC CALCULATIONS <u>EARTH TRAP. CHANNEL</u> <u>SECTION "A-A"</u>	HYDRAULIC CALCULATIONS <u>EARTH TRAP. CHANNEL</u> <u>SECTION "A-A"</u>
STA. 4+40.00 TO 5+30.00	STA. 5+30.00 TO END
Q25 = 63 CFS	Q25 = 63 CFS
Bw = 20.00 FT	Bw = 20.00 FT
n = 0.035	n = 0.035
S = 2.40%	S = 0.50%
Dn = 0.64 FT	Dn = 1.00 FT
Vh = 4.49 FPS	Vh = 2.74 FPS
D = 1.5 FT	D = 1.5 FT



PROJECT LIMITS

100' YR FLOODPLAIN

EXISTING CONTOUR

PROPOSED WATER

PROPOSED SEWER

PROPOSED STORM DRAIN

EXISTING STORM DRAIN

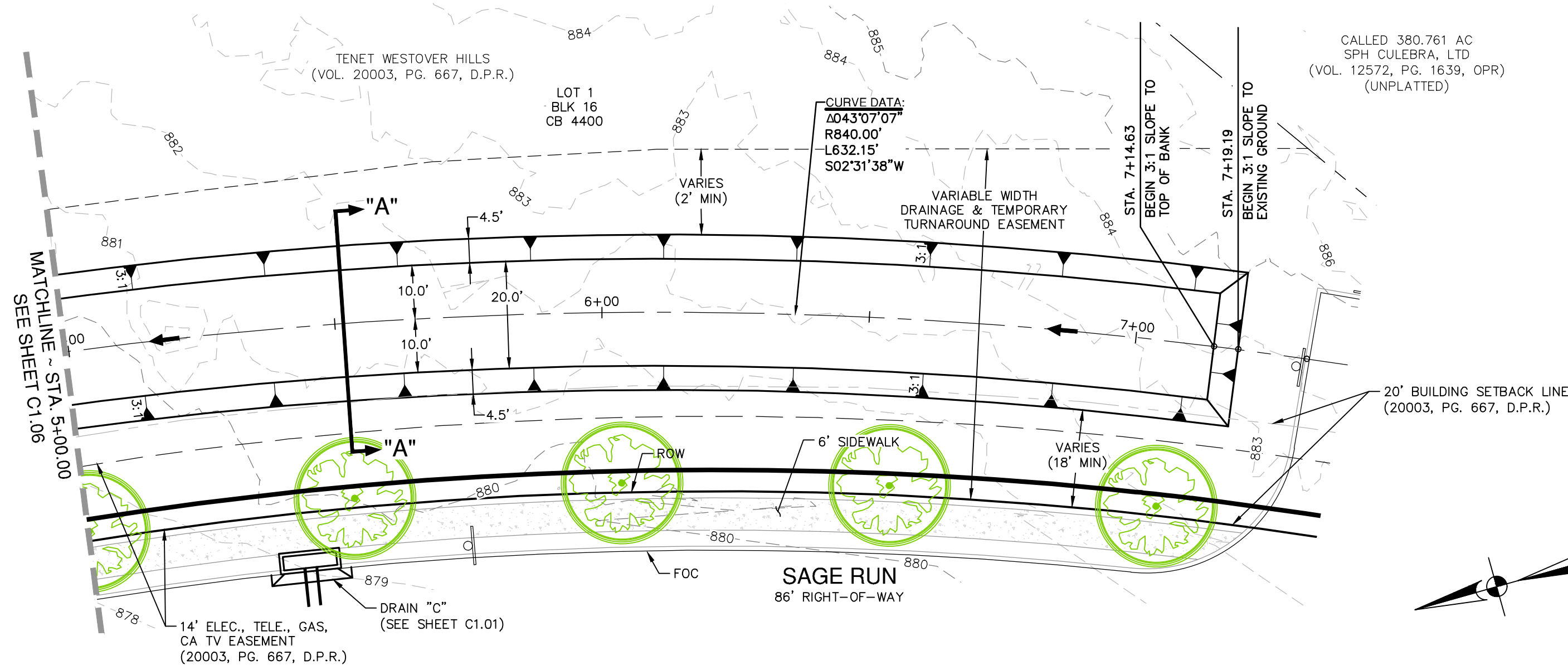
FLOW ARROW

690'

W

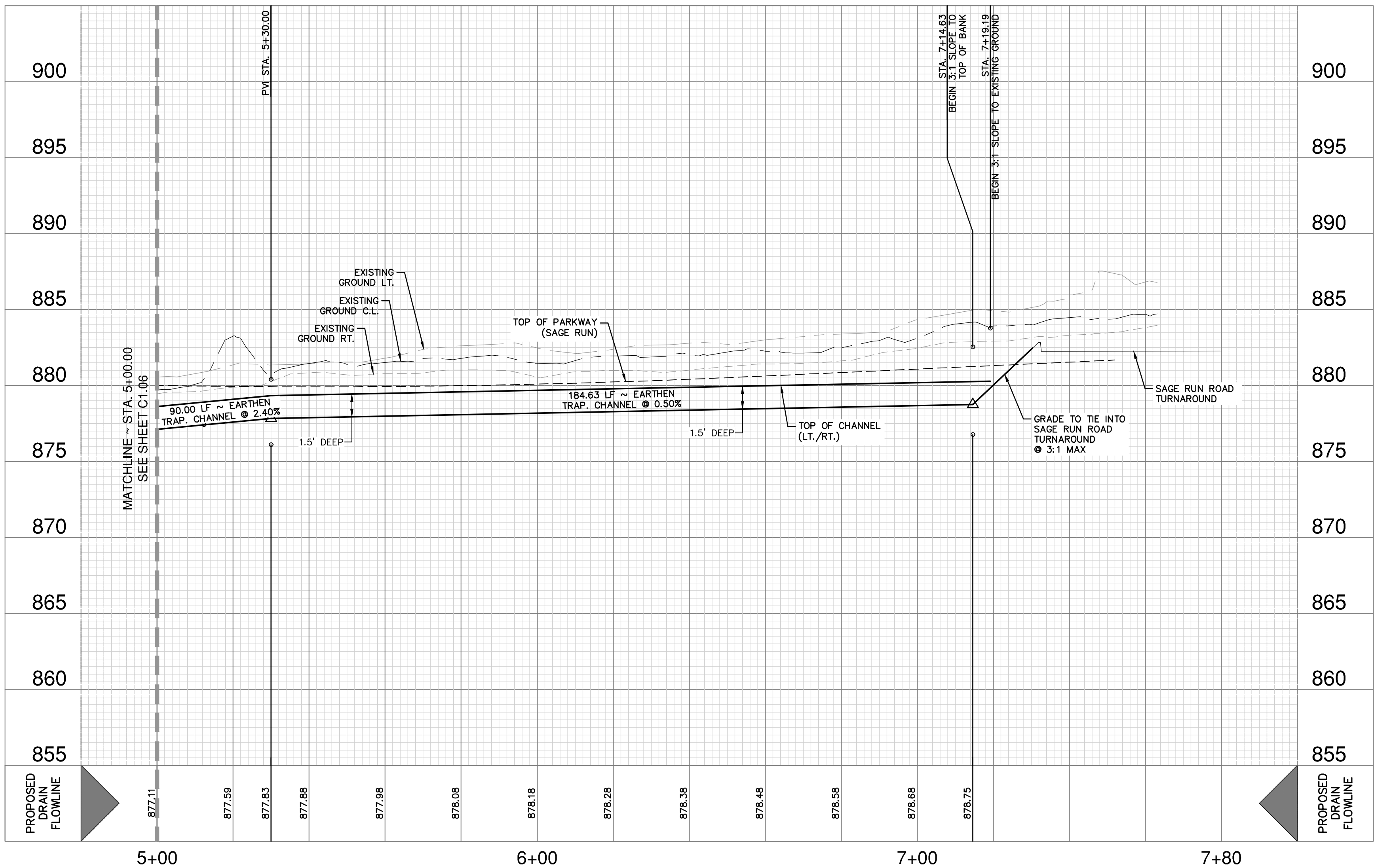
SS

The diagram illustrates a cross-section of a site with various utility lines and a proposed storm drain. At the top, a dashed line indicates the 'PROJECT LIMITS'. Below it, a solid line represents the '100' YR FLOODPLAIN'. A dashed line labeled '690'' shows the 'EXISTING CONTOUR'. A solid line labeled 'W' represents the 'PROPOSED WATER' line. A solid line labeled 'SS' represents the 'PROPOSED SEWER' line. A solid line with a rectangular structure represents the 'PROPOSED STORM DRAIN'. A dashed line with a rectangular structure represents the 'EXISTING STORM DRAIN'. A large black arrow at the bottom indicates the 'FLOW ARROW' direction.



DRAIN "G" ~ STA. 5+00.00 TO END

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 20'



DRAINAGE & GRADING NOTES:

1. A BEARX COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEARX COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
2. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER KNOWN OR UNKNOWN. THE CONTRACTOR SHALL UNCOVER AND PROTECT ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE, AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DAMAGE TO EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION, ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.
3. ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI IN 28 DAYS.
4. REFERENCE DRAWING DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
5. CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
6. IMPROVED EARTHEN CHANNELS AND DETENTION PONDS WILL BE VEGETATED BY SODDING. EIGHTY FIVE PERCENT (85%) OF THE CHANNEL SURFACE AREA MUST HAVE ESTABLISHED VEGETATION FOR MAINTENANCE. THE CITY OF SAN ANTONIO WILL ACCEPT THE CHANNEL FOR MAINTENANCE.
7. CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.

BEXAR COUNTY FLOODPLAIN GENERAL
CONSTRUCTION NOTE

NO CONSTRUCTION AND/OR WASTE MATERIAL SHALL BE PLACED IN EXISTING
LOWS THAT WILL BLOCK OR ALTER FLOW LIMITS OF EXISTING NATURAL
DRAINAGE OR PLACED WITHIN THE LIMITS OF EXISTING FLOODPLAIN.

CAUTION!!

EXISTING UTILITIES ARE LOCATED WITHIN THE LIMITS OF THE CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR SHALL EXERCISE EXTRA CARE IN DIGGING ANY TRENCH FOR PROPOSED UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING, VERIFYING THE EXACT LOCATION AND IDENTIFYING ANY AREAS OF CONFLICTS WITH EXISTING UTILITIES AND WILL NOTIFY THE ENGINEER IMMEDIATELY IF CONFLICTS ARE FOUND.

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TRENCH EXCAVATION SAFETY PROTECTION

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[illegible]

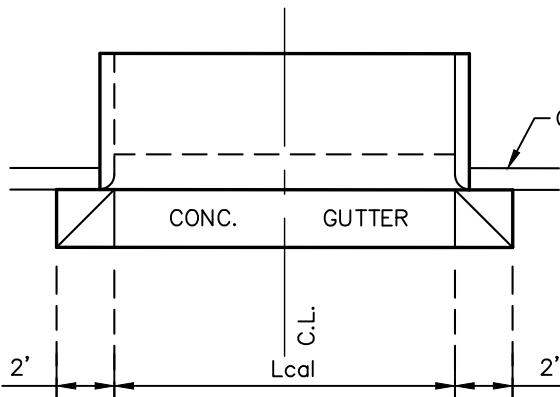
PAPE-DAWSON
ENGINEERS

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2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

SAGE RUN, PHASE-2
SAN ANTONIO, TEXAS

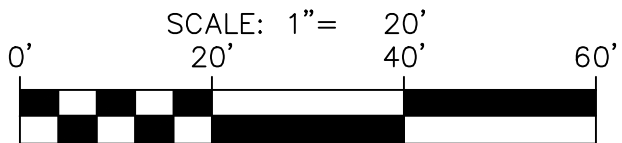
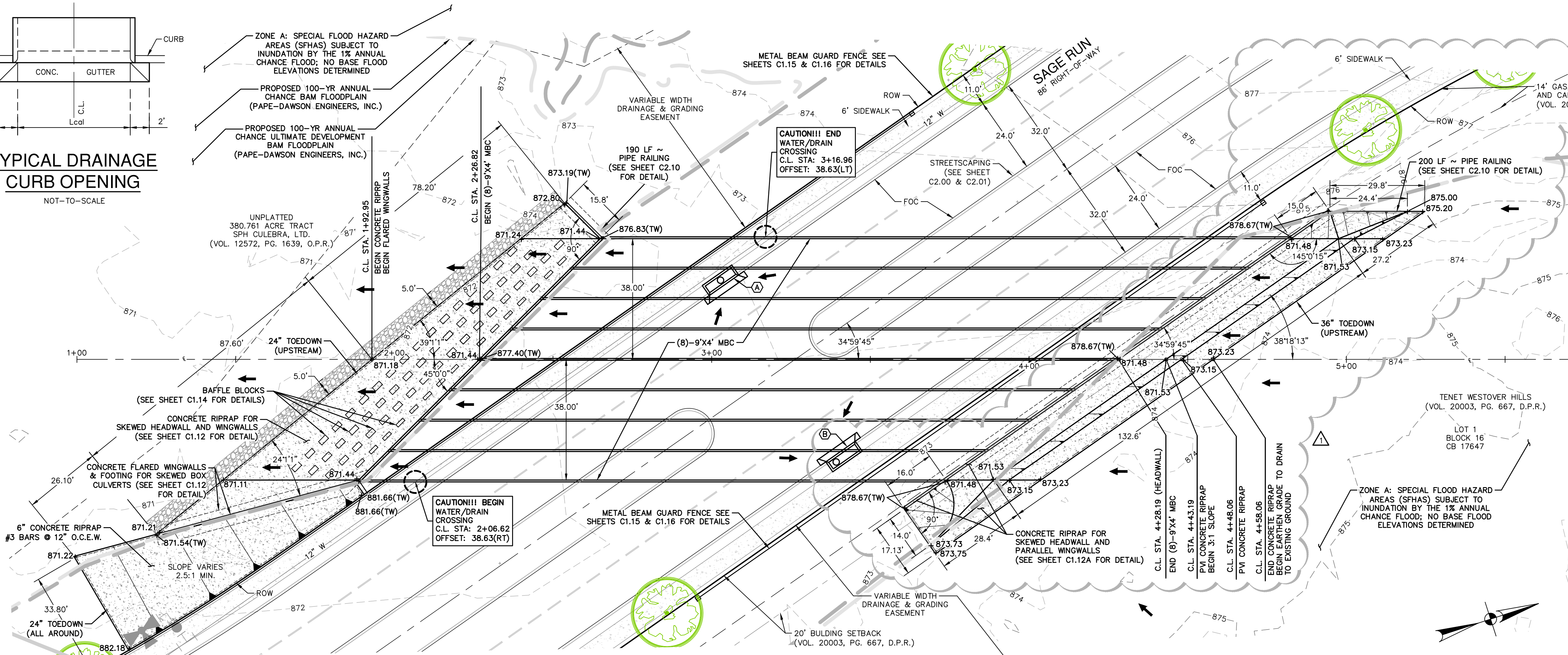
DRAIN "G" ~ STA. 5+00.00 TO END
DRAIN PLAN & PROFILE

PLAT NO. 22-11800755
 JOB NO. 12431-01
 DATE FEBRUARY 2024
 DESIGNER CB
 CHECKED VS DRAWN CB
 SHEET C1.07

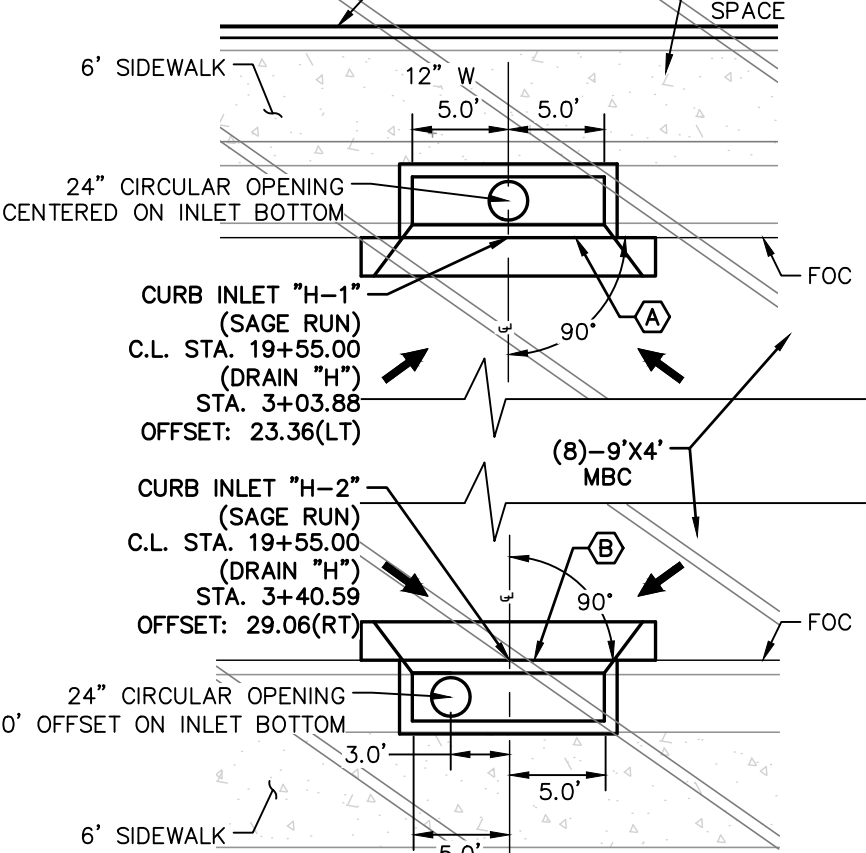
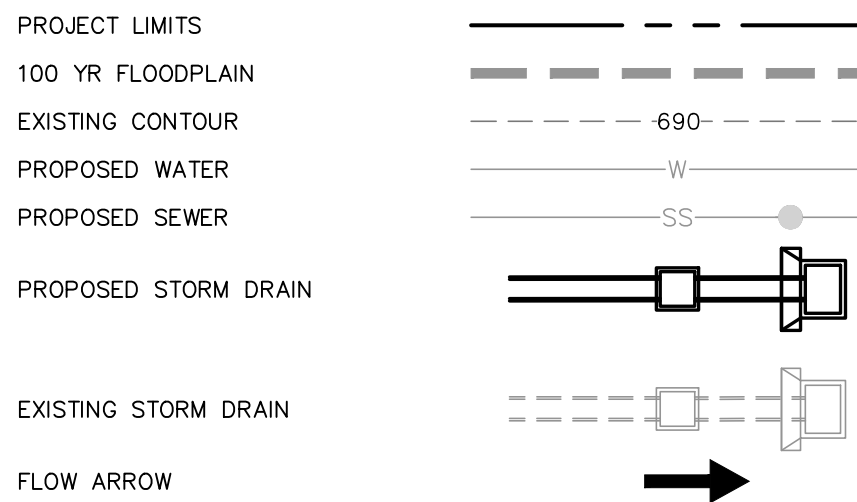


TYPICAL DRAINAGE CURB OPENING

NOT-TO-SCALE



DRAINAGE LEGEND

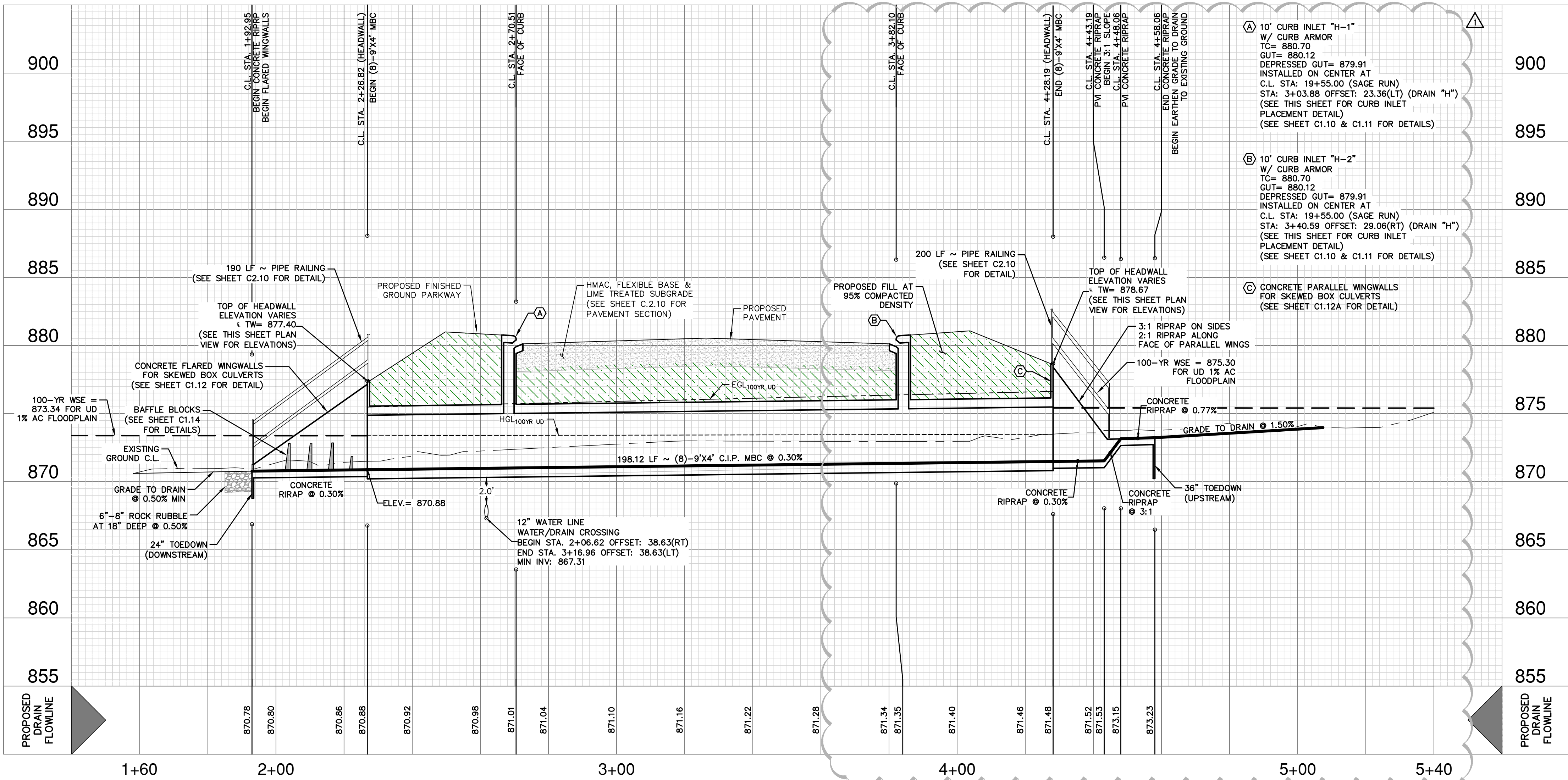


CURB INLET PLACEMENT DETAIL

SCALE: 1" = 10'

DRAIN "H" ~ STA. 1+00.00 TO END

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 20'



CURB OPENING "H-2"

HYDRAULIC CALCULATION

$Q_{25} = 16 \text{ CFS (COMP. POINT 14)}$
 $Q_{25} = CL(h)^{3/2} \text{ (WEIR EQN.)}$
 $C = 3.087, h = 0.79$
 $L = \frac{16 \text{ CFS}}{(3.087)(0.79)^{3/2}}$
 $L = 7.38 \text{ FT}$ USE 1 ~ 10 FT CURB INLET

CURB OPENING "H-1"

HYDRAULIC CALCULATION

$Q_{25} = 13 \text{ CFS (COMP. POINT 13)}$
 $Q_{25} = CL(h)^{3/2} \text{ (WEIR EQN.)}$
 $C = 3.087, h = 0.79$
 $L = \frac{13 \text{ CFS}}{(3.087)(0.79)^{3/2}}$
 $L = 6.00 \text{ FT}$ USE 1 ~ 10 FT CURB INLET

DRAINAGE & GRADING NOTES:

- A BEAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE, AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.
- ALL CONCRETE LINING SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI IN 28 DAYS.
- REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND ELEVATION LIMITS.
- CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
- IMPROVED EARTHEN CHANNELS AND DETENTION PONDS WILL BE VEGETATED BY SEEDING OR SODDING. EIGHTY FIVE PERCENT (85%) OF THE CHANNEL SURFACE AREA MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT THE CHANNEL FOR MAINTENANCE.
- CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.

BEAR COUNTY FLOODPLAIN GENERAL CONSTRUCTION NOTE

NO CONSTRUCTION AND/OR WASTE MATERIAL SHALL BE PLACED IN EXISTING LOWS THAT WILL BLOCK OR ALTER FLOW LIMITS OF EXISTING NATURAL DRAINAGE OR PLACED WITHIN THE LIMITS OF EXISTING FLOODPLAIN.

CAUTION!!

EXISTING UTILITIES ARE LOCATED WITHIN THE LIMITS OF THE CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR SHALL EXERCISE EXTRA CARE IN DIGGING ANY TRENCH FOR PROPOSED UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE EXACT LOCATION AND IDENTIFYING ANY AREAS OF CONFLICTS WITH EXISTING UTILITIES AND WILL NOTIFY THE ENGINEER IMMEDIATELY IF CONFLICTS ARE FOUND.

CAUTION!!

CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING, SECONDARY ELECTRICAL, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

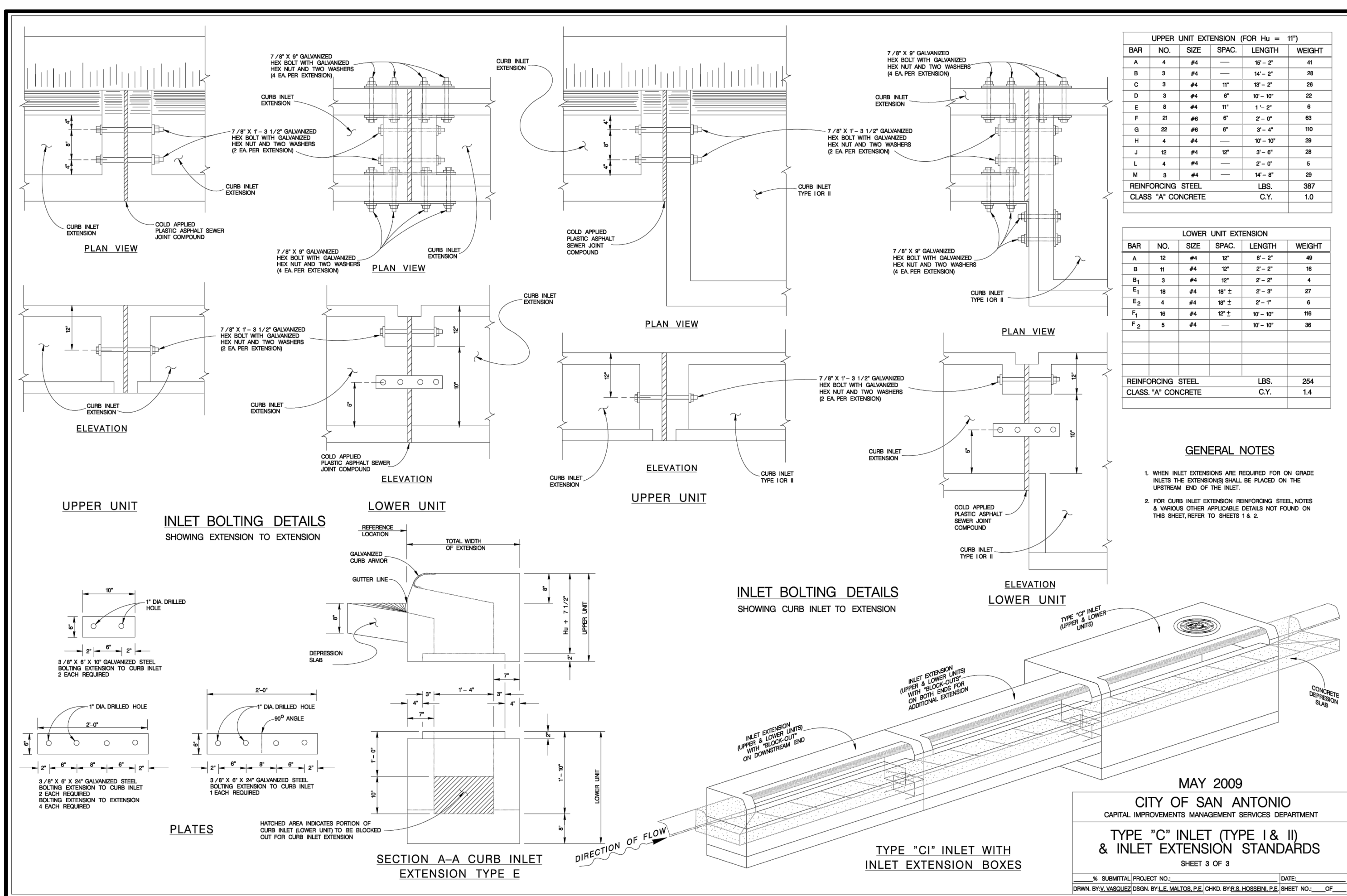
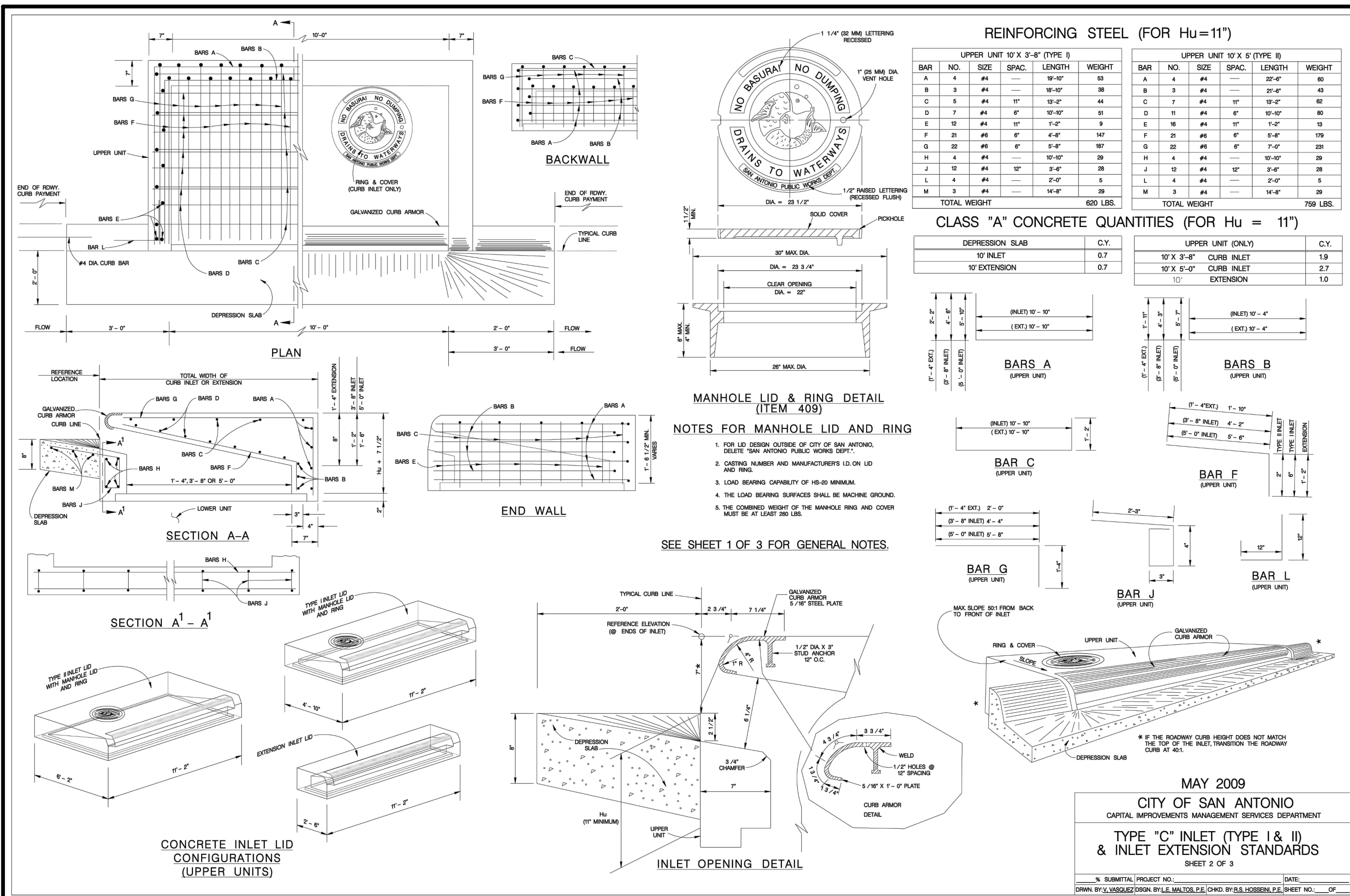
DATE	11/20/2024
REVISION	
NO.	
1	TURN LANE AND CULVERT

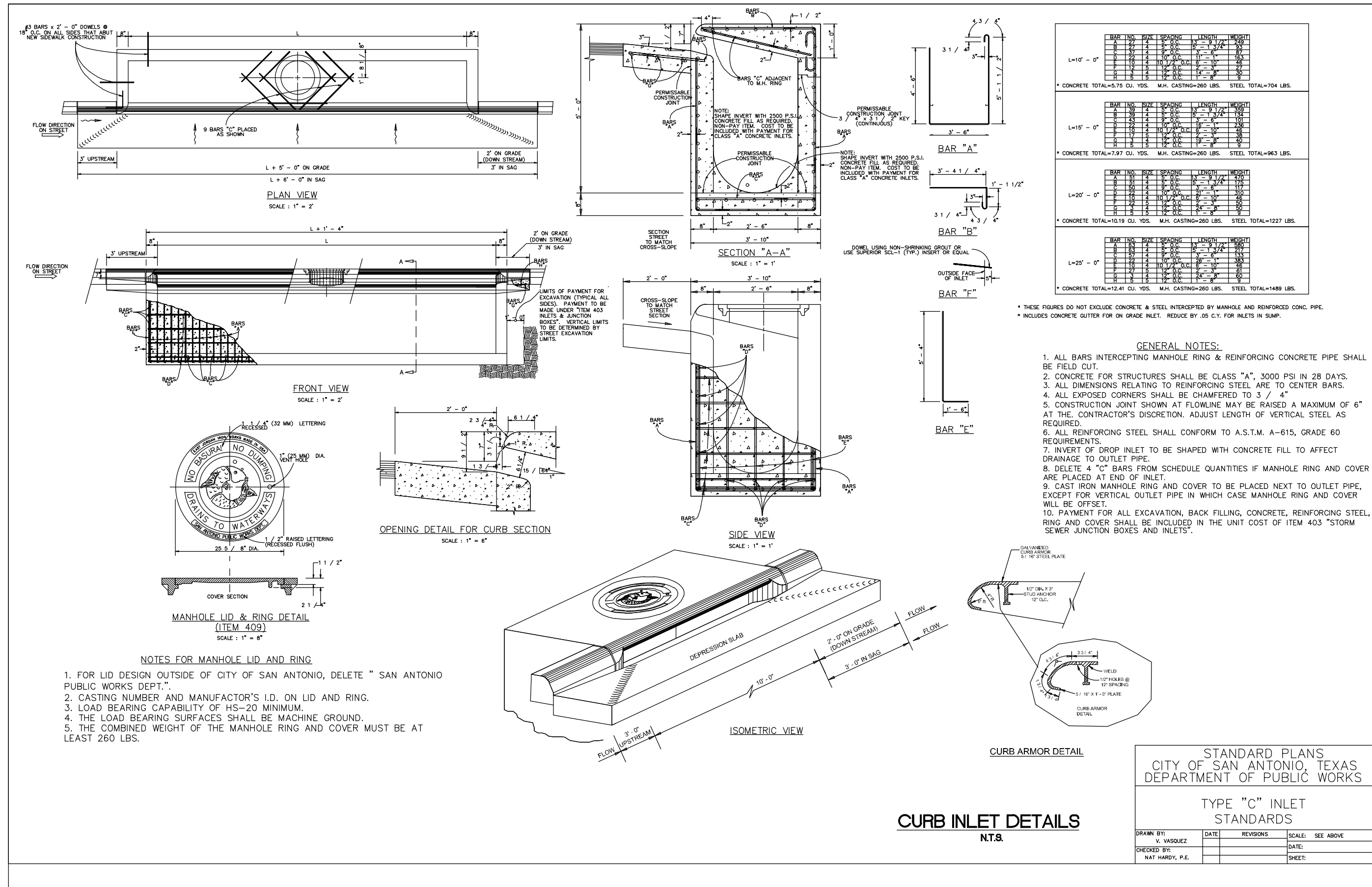


PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

SAGE RUN, PHASE-2
SAN ANTONIO, TEXAS
DRAIN "H" ~ STA. 1+00.00 TO END
DRAIN PLAN & PROFILE

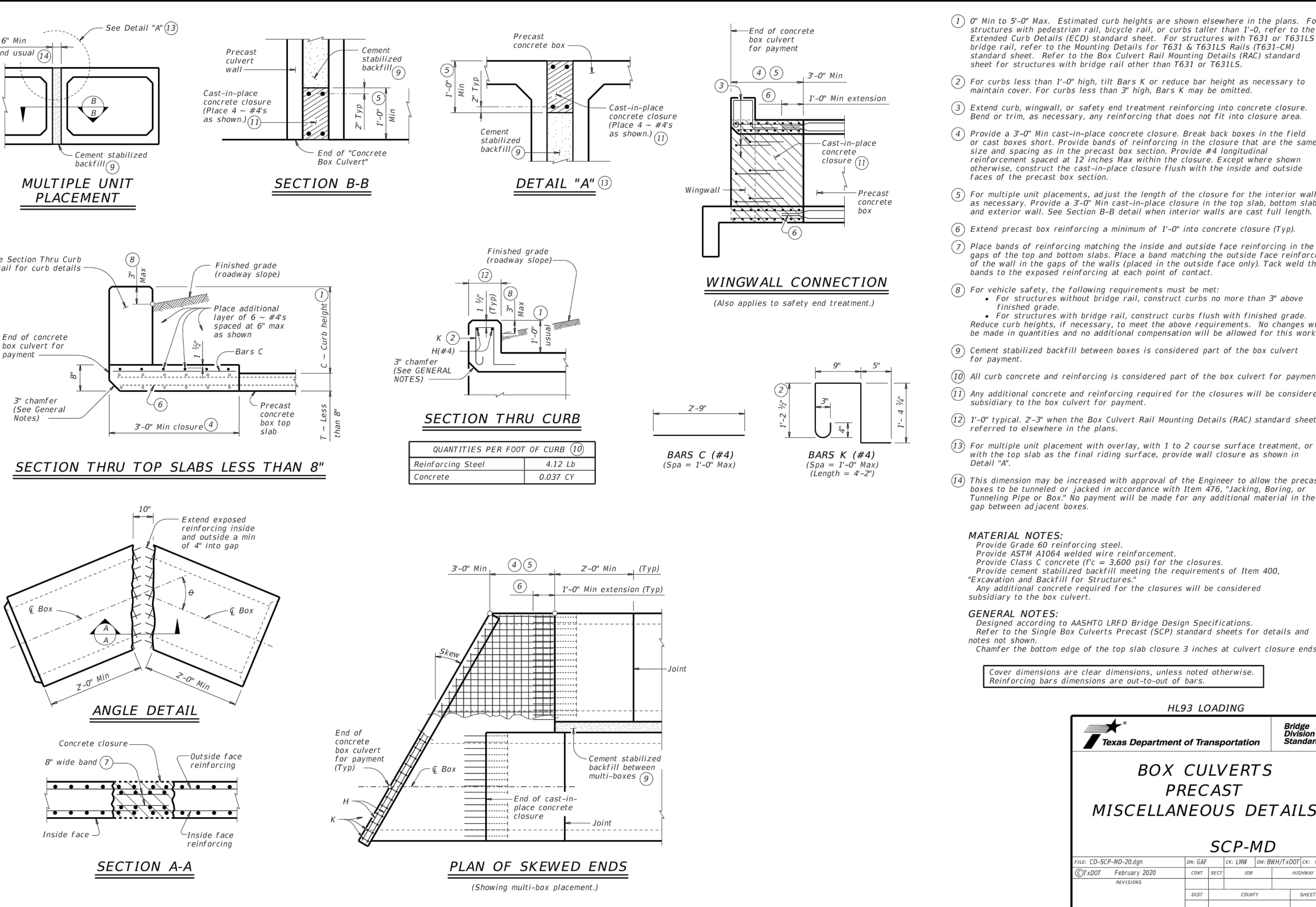
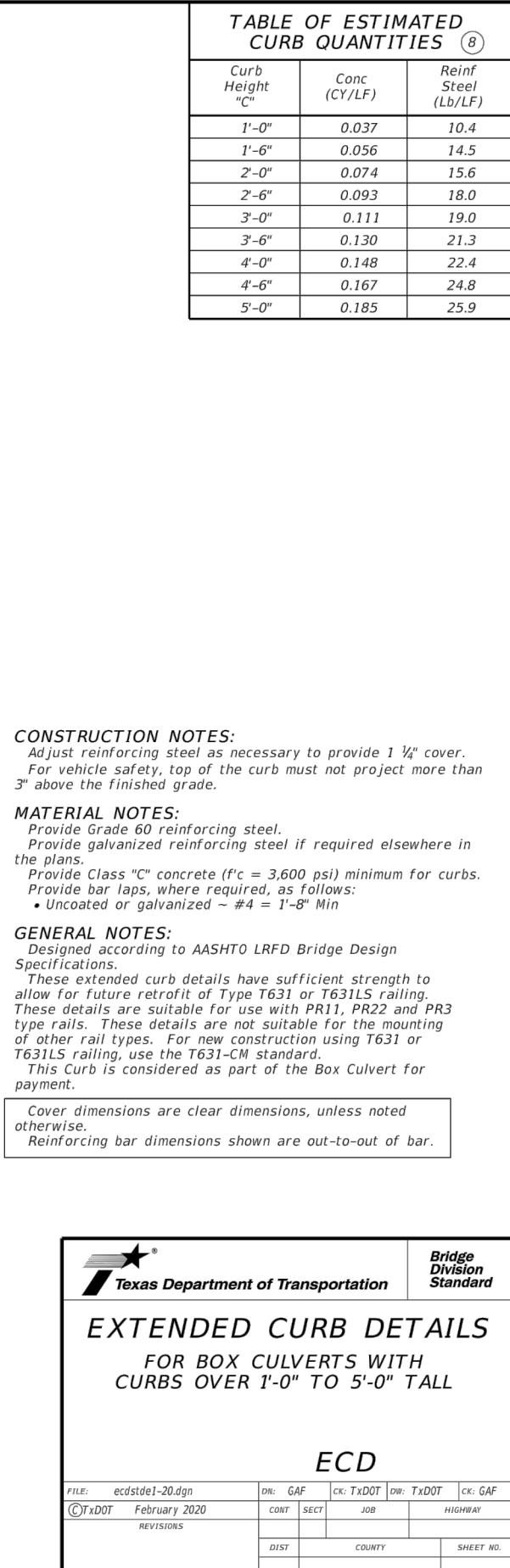
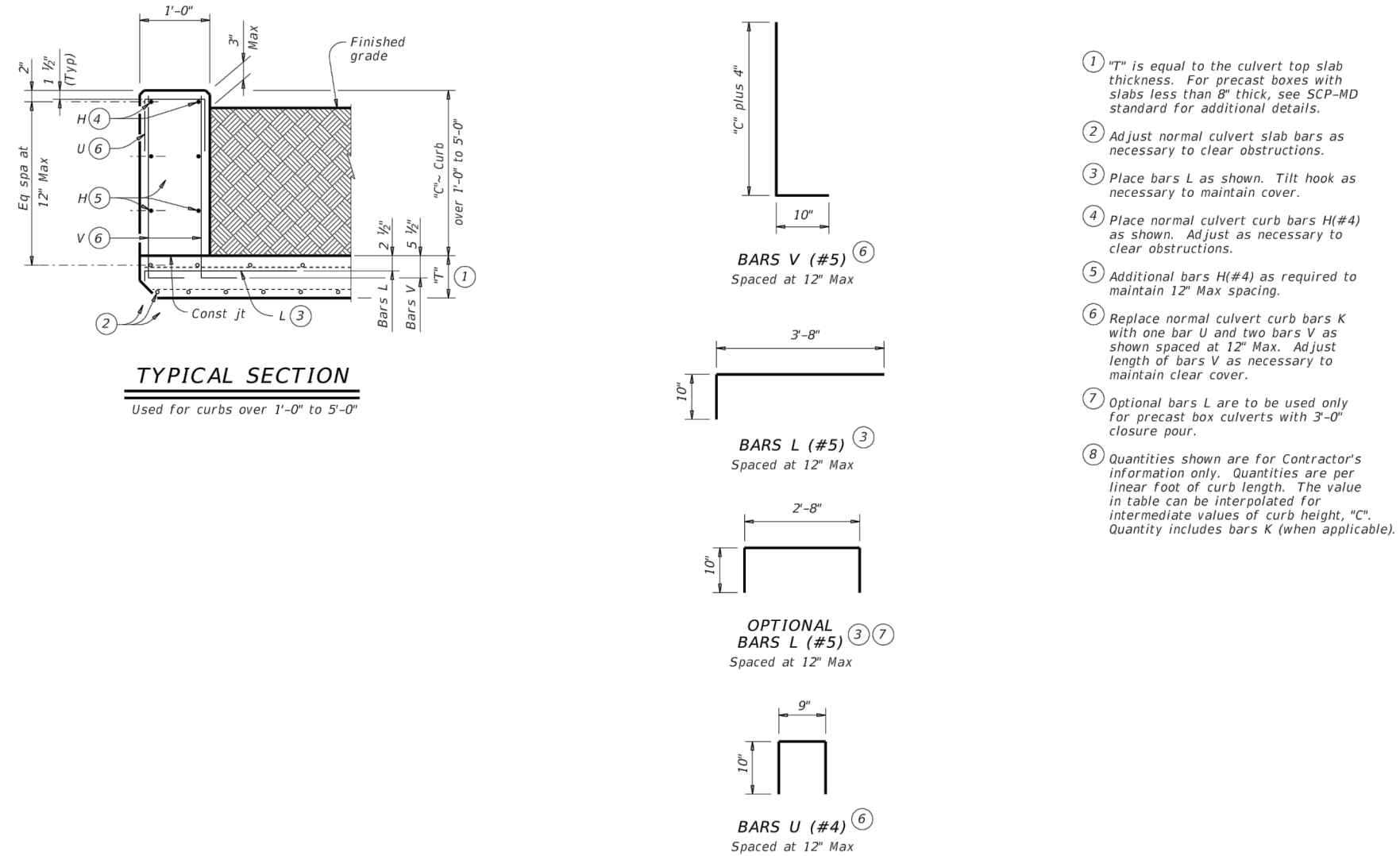
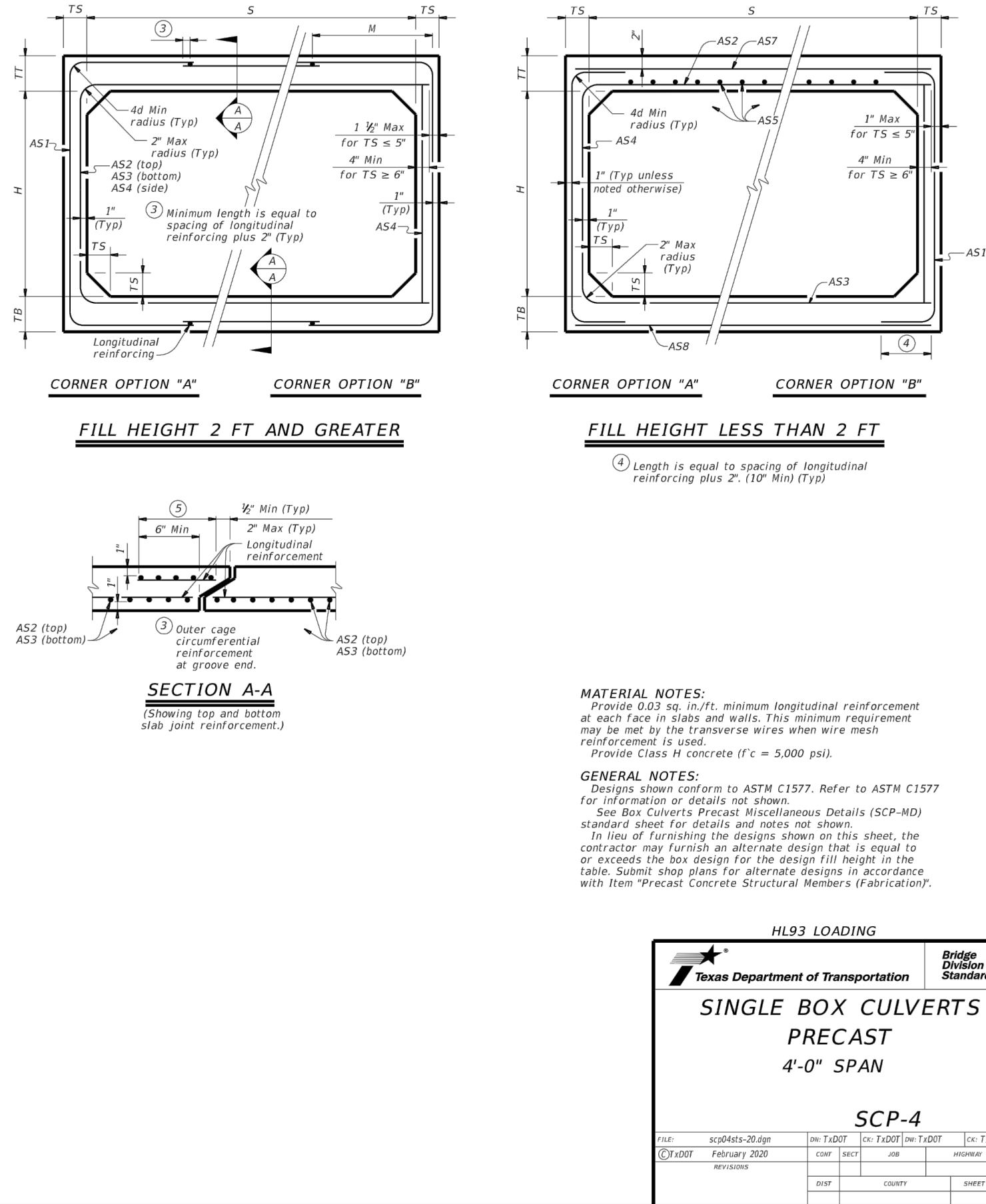
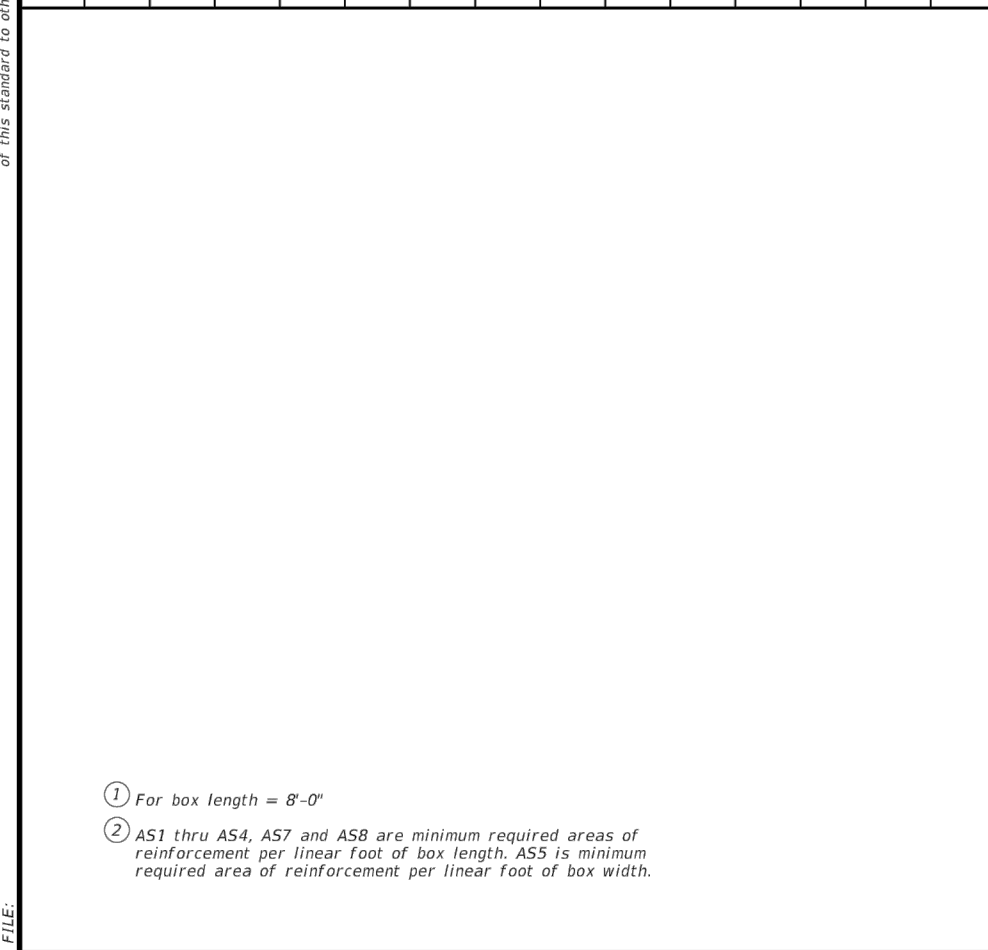
PLAT NO.	22-118007-55
JOB NO.	12431-01
DATE	NOVEMBER 2024
DESIGNER	RS
CHECKED	VS
DRAWN	CB
SHEET	C1.08





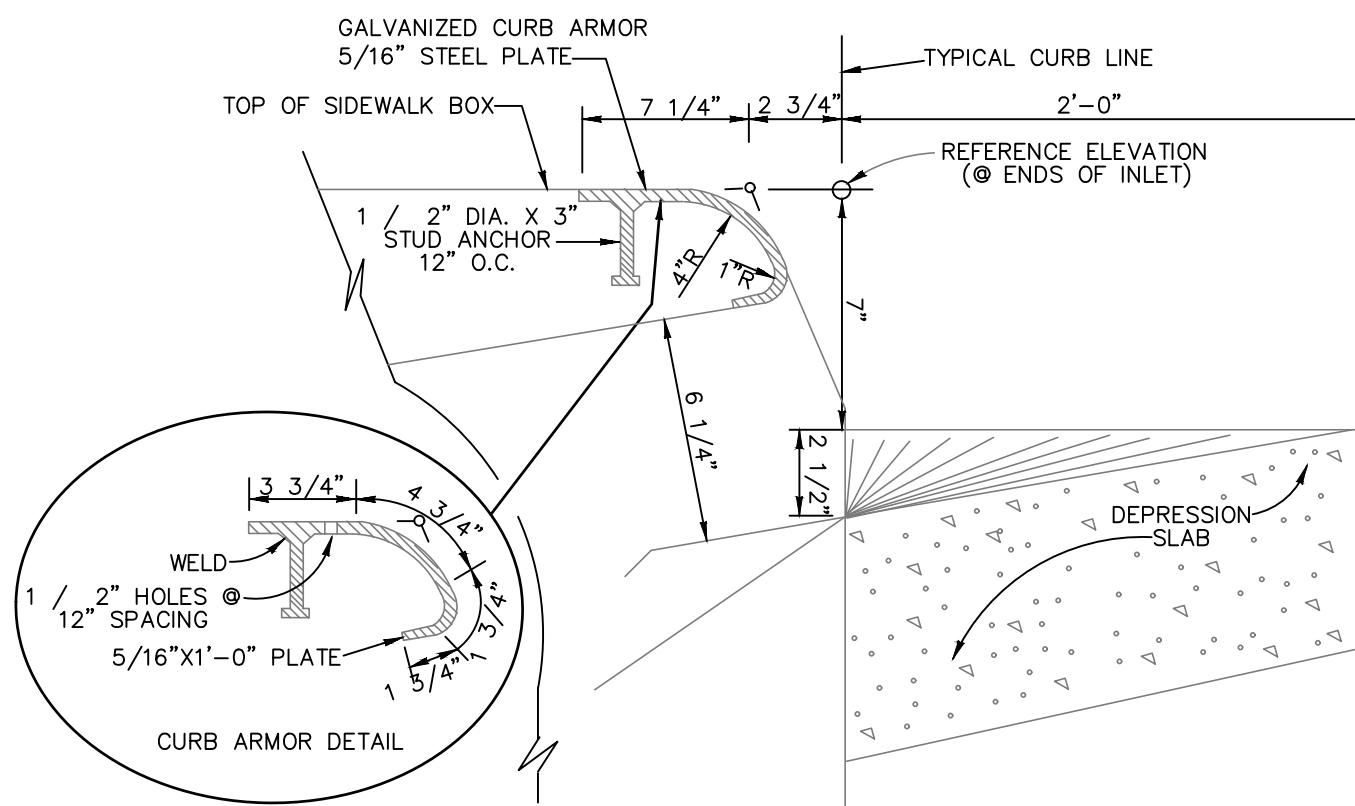
BOX DATA

SECTION DIMENSIONS					REINFORCING (sq. in. / ft.) ⁽²⁾									(1) LIFT Weight (tons)
S	H	TT	TS	TS	Height	M	AS1	AS2	AS3	AS4	AS5	AS7	AS8	
(ft.)	(ft.)	(in.)	(in.)	(in.)	(ft.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	(in.)	
4	2	7.5	6	5	< 2	-	0.18	0.27	0.15	0.12	0.18	0.18	0.14	4.3
4	2	5	5	5	2 < 3	38	0.18	0.19	0.17	0.12	-	-	-	3.8
4	2	5	5	5	3-5	38	0.13	0.13	0.13	0.12	-	-	-	3.6
4	2	5	5	5	10-38	38	0.12	0.12	0.12	0.12	-	-	-	3.6
4	2	5	5	5	15	38	0.14	0.16	0.16	0.12	-	-	-	3.8
4	2	5	5	5	20	38	0.18	0.20	0.21	0.12	-	-	-	3.8
4	2	5	5	5	25	38	0.23	0.25	0.25	0.12	-	-	-	3.8
4	2	5	5	5	30	38	0.28	0.30	0.30	0.12	-	-	-	3.6
4	3	7.5	6	5	< 2	-	0.18	0.31	0.18	0.12	0.18	0.18	0.14	5.6
4	3	5	5	5	2 < 3	38	0.15	0.23	0.20	0.12	-	-	-	4.7
4	3	5	5	5	3-5	38	0.12	0.16	0.16	0.12	-	-	-	4.7
4	3	5	5	5	10-38	38	0.12	0.14	0.14	0.12	-	-	-	4.7
4	3	5	5	5	15	38	0.12	0.18	0.18	0.12	-	-	-	4.7
4	3	5	5	5	20	38	0.14	0.23	0.24	0.12	-	-	-	4.7
4	3	5	5	5	25	38	0.17	0.29	0.29	0.12	-	-	-	4.7
4	3	5	5	5	30	38	0.21	0.35	0.35	0.12	-	-	-	4.7
4	4	7.5	6	5	< 2	-	0.18	0.33	0.20	0.12	0.18	0.18	0.14	5.9
4	4	5	5	5	2 < 3	38	0.12	0.26	0.23	0.12	-	-	-	4.6
4	4	5	5	5	3-5	38	0.12	0.18	0.18	0.12	-	-	-	4.6
4	4	5	5	5	10-38	38	0.12	0.15	0.15	0.12	-	-	-	4.6
4	4	5	5	5	15	38	0.12	0.19	0.20	0.12	-	-	-	4.6
4	4	5	5	5	20	38	0.12	0.25	0.25	0.12	-	-	-	4.6
4	4	5	5	5	25	38	0.14	0.31	0.31	0.12	-	-	-	4.6
4	4	5	5	5	30	38	0.17	0.37	0.37	0.12	-	-	-	4.6



Disclaimer: This standard is based on the Texas Engineering Practice Act. No warranty is made by the State of Texas or the Texas Department of Transportation for the use of this standard in any project or for the construction of any project. The user assumes all liability for the use of this standard in any project or for the construction of any project.

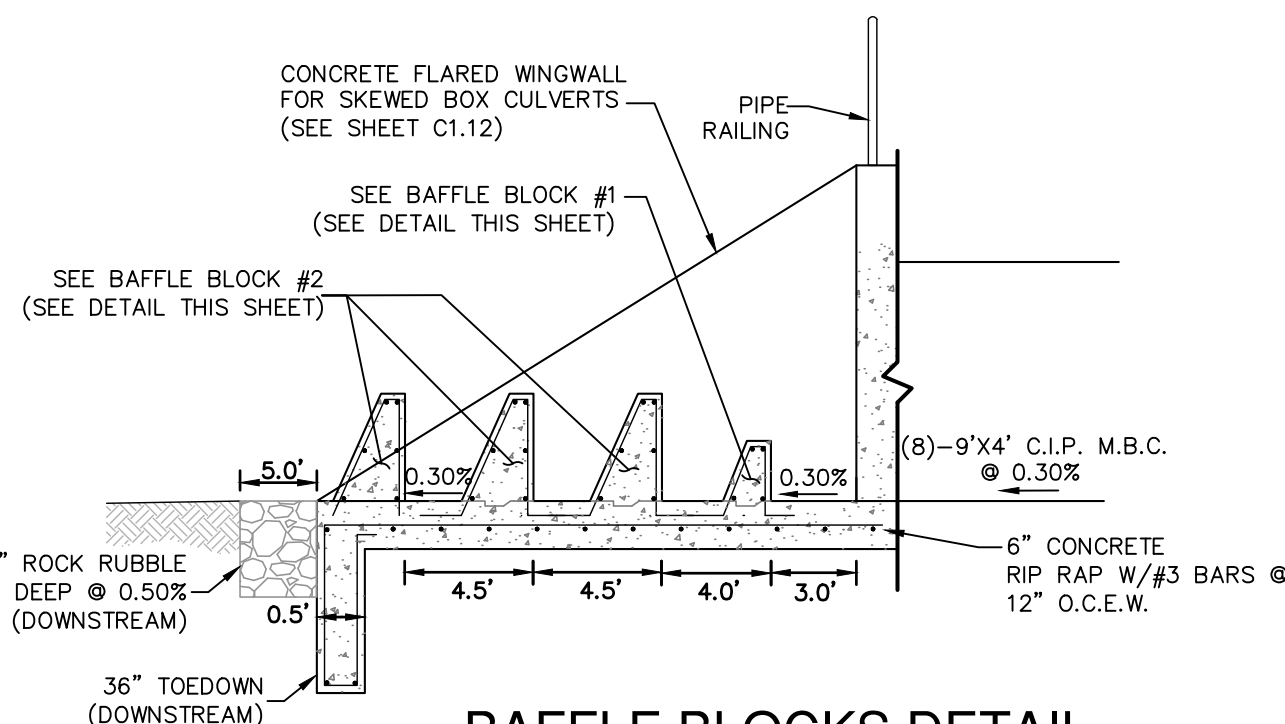
ROWS	SECTION DIMENSIONS		BILLS OF REINFORCING STEEL (For Box Length = 40 Feet)																																								QUANTITIES							
			Bars B				Bars C & D				Bars E				Bars F1 ~ #4				Bars F2 ~ #4				Bars M ~ #4				Bars Y & Z ~ #4				Bars H ~ #4				Bars K		Per Foot of		Curb	Total										
	No.	Size	Spa	Length	No.	Size	Spa	Length	No.	Size	Spa	Length	No.	Size	Spa	Length	No.	Size	Spa	Length	No.	Size	Spa	Length	No.	Size	Spa	Length	No.	Size	Spa	Length	No.	Size	Spa	Length	Conc (CY)	Reinf (CY)												
S	H	T	U	No.	Size	Spa	Length	Wt	No.	Size	Spa	Length	Wt	No.	Size	Spa	Length	Wt	No.	Size	Spa	Length	Wt	No.	Size	Spa	Length	Wt	No.	Size	Spa	Length	Wt	No.	Size	Spa	Length	Conc (CY)	Reinf (CY)											
2	9'-0"	4'-0"	9"	7"	162	#6	6'-19'-6"	4,745	108	#6	9'-10"	1,636	8'-7"	1,392	162	#6	6'-14'-1"	3,427	14	18	39'-9"	372	62	18	39'-9"	1,646	108	9'	4'-9"	171	9'-5"	340	19'-6"	52	42	117	1,356	350.5	1.5	169	55.7	14,187								
3	9'-0"	4'-0"	9"	7"	162	#6	6'-29'-1"	7,077	108	#6	9'-10"	1,636	8'-7"	1,392	162	#6	6'-23'-8"	5,759	21	18	39'-9"	558	68	18	39'-9"	2,363	108	9'	4'-9"	289	108	9'	4'-9"	685	9'-5"	1,359	48'-3"	129	100	278	3,213	806.2	3.6	407	132.1	32,656				
4	9'-0"	4'-0"	9"	7"	162	#6	6'-38'-8"	9,409	108	#6	9'-10"	1,636	8'-7"	1,392	162	#6	6'-33'-3"	8,091	28	18	39'-9"	743	116	18	39'-9"	3,080	108	9'	4'-9"	514	9'-5"	1,019	38'-9"	103	80	223	2,594	654.3	2.9	326	106.6	26,499								
5	9'-0"	4'-0"	9"	7"	162	#6	6'-48'-3"	11,740	108	#6	9'-10"	1,636	8'-7"	1,392	162	#6	6'-42'-10"	10,422	35	18	39'-9"	929	143	18	39'-9"	3,797	108	9'	4'-9"	289	216	9'	4'-9"	685	9'-5"	1,359	48'-3"	129	100	278	3,213	806.2	3.6	407	132.1	32,656				
6	9'-0"	4'-0"	9"	7"	162	#6	6'-57'-10"	14,072	108	#6	9'-10"	1,636	8'-7"	1,392	162	#6	6'-52'-5"	12,754	42	18	39'-9"	1,115	170	18	39'-9"	4,514	108	9'	4'-9"	289	270	9'	4'-9"	657	9'-5"	1,698	57'-10"	155	118	328	3,832	958.2	4.3	483	157.6	38,810				
2	9'-0"	5'-0"	9"	7"	162	#6	6'-19'-6"	4,745	108	#6	9'-11'-1"	1,798	8'-7"	1,392	162	#6	6'-14'-1"	3,427	14	18	39'-9"	372	68	18	39'-9"	1,806	108	9'	5'-0"	361	54	9'-5"	412	19'-6"	52	42	117	1,421	362.1	1.5	169	58.3	14,653							
3	9'-0"	5'-0"	9"	7"	162	#6	6'-29'-1"	7,077	108	#6	9'-11'-1"	1,798	8'-7"	1,392	162	#6	6'-23'-8"	5,759	21	18	39'-9"	558	97	18	39'-9"	2,576	108	9'	5'-0"	361	108	9'	4'-9"	343	11'-5"	824	29'-1"	78	62	173	2,063	517.2	2.2	251	84.6	20,939				
4	9'-0"	5'-0"	9"	7"	162	#6	6'-38'-8"	9,409	108	#6	9'-11'-1"	1,798	8'-7"	1,392	162	#6	6'-33'-3"	8,091	28	18	39'-9"	743	126	18	39'-9"	3,346	108	9'	5'-0"	361	162	9'-5"	514	11'-5"	1,235	38'-8"	103	80	223	2,702	672.2	2.9	326	111.0	27,215					
5	9'-0"	5'-0"	9"	7"	162	#6	6'-48'-3"	11,740	108	#6	9'-11'-1"	1,798	8'-7"	1,392	162	#6	6'-42'-10"	10,422	35	18	39'-9"	929	155	18	39'-9"	4,116	108	9'	5'-0"	361	216	9'-5"	685	11'-5"	1,647	48'-3"	129	100	278	3,343	827.3	3.6	407	137.3	33,497					
6	9'-0"	5'-0"	9"	7"	162	#6	6'-57'-10"	14,072	108	#6	9'-11'-1"	1,798	8'-7"	1,392	162	#6	6'-52'-5"	12,754	42	18	39'-9"	1,115	184	18	39'-9"	4,886	108	9'	5'-0"	361	270	9'-5"	857	11'-5"	2,059	57'-10"	155	118	328	3,983	982.4	4.3	483	163.6	39,777					
2	9'-0"	6'-0"	9"	7"	162	#6	6'-19'-6"	4,745	108	#6	9'-12'-1"	1,960	8'-7"	1,392	162	#6	6'-14'-1"	3,427	14	18	39'-9"	372	74	18	39'-9"	1,965	108	9'	6'-0"	433	54	9'-5"	171	12'-5"	484	19'-6"	52	42	117	1,486	371.2	1.5	169	60.9	15,716					
3	9'-0"	6'-0"	9"	7"	162	#6	6'-29'-1"	7,077	108	#6	9'-12'-1"	1,960	8'-7"	1,392	162	#6	6'-23'-8"	5,759	21	18	39'-9"	558	105	18	39'-9"	2,768	108	9'	6'-0"	433	108	9'-5"	343	13'-5"	964	29'-1"	78	62	173	2,148	532.0	2.2	251	88.1	21,529					
4	9'-0"	6'-0"	9"	7"	162	#6	6'-38'-8"	9,409	108	#6	9'-12'-1"	1,960	8'-7"	1,392	162	#6	6'-33'-3"	8,091	28	18	39'-9"	743	136	18	39'-9"	3,611	108	9'	6'-0"	433	162	9'-5"	514	13'-5"	1,452	38'-8"	103	80	223	2,810	690.1	2.9	326	115.3	27,931					
5	9'-0"	6'-0"	9"	7"	162	#6	6'-48'-3"	11,740	108	#6	9'-12'-1"	1,960	8'-7"	1,392	162	#6	6'-42'-10"	10,422	35	18	39'-9"	929	167	18	39'-9"	4,434	108	9'	6'-0"	433	216	9'-5"	685	13'-5"	1,936	48'-3"	129	100	278	3,472	849.3	3.6	407	142.5	34,338					
6	9'-0"	6'-0"	9"	7"	162	#6	6'-57'-10"	14,072	108	#6	9'-12'-1"	1,960	8'-7"	1,392	162	#6	6'-52'-5"	12,754	42	18	39'-9"	1,115	188	18	39'-9"	5,295	108	9'	6'-0"	433	270	9'-5"	857	13'-5"	2,430	57'-10"	155	118	328	4,244	1,066.5	4.3	483	169.6	40,743					
2	9'-0"	7'-0"	9"	7"	162	#6	6'-19'-6"	4,745	108	#6	9'-13'-1"	2,122	8'-7"	1,392	162	#6	6'-14'-1"	3,427	14	18	39'-9"	372	74	18	39'-9"	1,965	108	9'	7'-0"	505	54	9'-5"	171	15'-5"	556	19'-6"	52	42	117	1,551	381.4	1.5	169	63.5	15,424					
3	9'-0"	7'-0"	9"	7"	162	#6	6'-29'-1"	7,077	108	#6	9'-13'-1"	2,122	8'-7"	1,392	162	#6	6'-23'-8"	5,759	21	18	39'-9"	558	105	18	39'-9"	2,768	108	9'	7'-0"	505	108	9'-5"	343	15'-5"	1,112	29'-1"	78	62	173	2,235	541.4	2.2	251	91.6	21,907					
4	9'-0"	7'-0"	9"	7"	162	#6	6'-38'-8"	9,409	108	#6	9'-13'-1"	2,122	8'-7"	1,392	162	#6	6'-33'-3"	8,091	28	18	39'-9"	743	136	18	39'-9"	3,611	108	9'	7'-0"	505	162	9'-5"	514	15'-5"	1,668	38'-8"	103	80	223	2,918	701.4	2.9	326	119.6	28,361					
5	9'-0"	7'-0"	9"	7"	162	#6	6'-48'-3"	11,740	108	#6	9'-13'-1"	2,122	8'-7"	1,392	162	#6	6'-42'-10"	10,422	35	18	39'-9"	929	167	18	39'-9"	4,434	108	9'	7'-0"	505	216	9'-5"	685	15'-5"	2,254	48'-3"	129	100	278	3,602	861.3	3.6	407	147.7	34,860					
6	9'-0"	7'-0"	9"	7"	162	#6	6'-57'-10"	14,072	108	#6	9'-13'-1"	2,122	8'-7"	1,392	162	#6	6'-52'-5"	12,754	42	18	39'-9"	1,115	188	18	39'-9"	5,295	108	9'	7'-0"	505	270	9'-5"	857	15'-5"	2,781	57'-10"	155	118	328	4,285	1,021.4	4.3	483	157.7	41,338					
2	9'-0"	8'-0"	9"	7"	162	#6	6'-19'-6"	4,745	108	#6	9'-14'-1"	2,285	8'-7"	1,392	162	#6	6'-14'-1"	3,427	14	18	39'-9"	372	80	18	39'-9"	2,124	108	9'	8'-0"	577	54	9'-5"	171	17'-5"	628	19'-6"	52	42	117	1,616	393.0	1.5	169	66.1	15,890					
3	9'-0"	8'-0"	9"	7"	162	#6	6'-29'-1"	7,077	108	#6	9'-14'-1"	2,285	8'-7"	1,392	162	#6	6'-23'-8"	5,759	21	18	39'-9"	558	113	18	39'-9"	3,000	108	9'	8'-0"	577	108	9'-5"	343	17'-5"	1,257	29'-1"	78	62	173	2,321	586.2	2.2	251	95.0	22,499					
4	9'-0"	8'-0"	9"	7"	162	#6	6'-38'-8"	9,409	108	#6	9'-14'-1"	2,285	8'-7"	1,392	162	#6	6'-33'-3"	8,091	28	18	39'-9"	743	146	18	39'-9"	3,877	108	9'	8'-0"	577	162	9'-5"	514	17'-5"	1,885	38'-8"	103	80	223	3,026	719.3	2.9	326	123.9	29,099					
5	9'-0"	8'-0"	9"	7"	162	#6	6'-48'-3"	11,740	108	#6	9'-14'-1"	2,285	8'-7"	1,392	162	#6	6'-42'-10"	10,422	35	18	39'-9"	929	179	18	39'-9"	4,753	108	9'	8'-0"	577	216	9'-5"	685	17'-5"	2,513	48'-3"	129	100	278	3,731	882.4	3.6	407	152.8	35,703					
6	9'-0"	8'-0"	9"	7"	162	#6	6'-57'-10"	14,072	108	#6	9'-14'-1"	2,285	8'-7"	1,392	162	#6	6'-52'-5"	12,754	42	18	39'-9"	1,115	212	18	39'-9"	5,629	108	9'	8'-0"	577	270	9'-5"	857	17'-5"	3,141	57'-10"	155	118	328	4,437	1,046.6	4.3	483	181.8	42,305					
2	9'-0"	9'-0"	9"	7"	162	#6	6'-19'-6"	4,745	108	#6	9'-15'-1"	2,447	8'-7"	1,392	162	#6	6'-14'-1"	3,427	14	18	39'-9"	372	86	18	39'-9"	2,284	108	9'	9'-0"	649	54	9'-5"	171	19'-5"	700	19'-6"	52	42	117	1,681	404.7	1.5	169	68.0	16,356					
3	9'-0"	9'-0"	9"	7"	162	#6	6'-29'-1"	7,077	108	#6	9'-15'-1"	2,447	8'-7"	1,392	162	#6	6'-23'-8"	5,759	21	18	39'-9"	558	121	18	39'-9"	3,213	108	9'	9'-0"	649	108	9'-5"	343	19'-5"	1,401	29'-1"	78	62	173	2,407	571.0	2.2	251	98.2	23,090					
4	9'-0"	9'-0"	9"	7"	162	#6	6'-38'-8"	9,409	108	#6	9'-15'-1"	2,447	8'-7"	1,392	162	#6	6'-33'-3"	8,091	28	18	39'-9"	743	156	18	39'-9"	4,142	108	9'	9'-0"	649	162	9'-5"	514	19'-5"	2,101	38'-8"	103	80	223	3,134	737.2	2.9	326	128.0	29,814					
5	9'-0"	9'-0"	9"	7"	162	#6	6'-48'-3"	11,740	108	#6	9'-15'-1"	2,447	8'-7"	1,392	162	#6	6'-42'-10"	10,422	35	18	39'-9"	929	167	18	39'-9"	4,434	108	9'	9'-0"	649	216	9'-5"	685	19'-5"	2,502	48'-3"	129	100	278	3,602	861.3	3.6	407	147.7	34,860					
6	9'-0"	9'-																																																



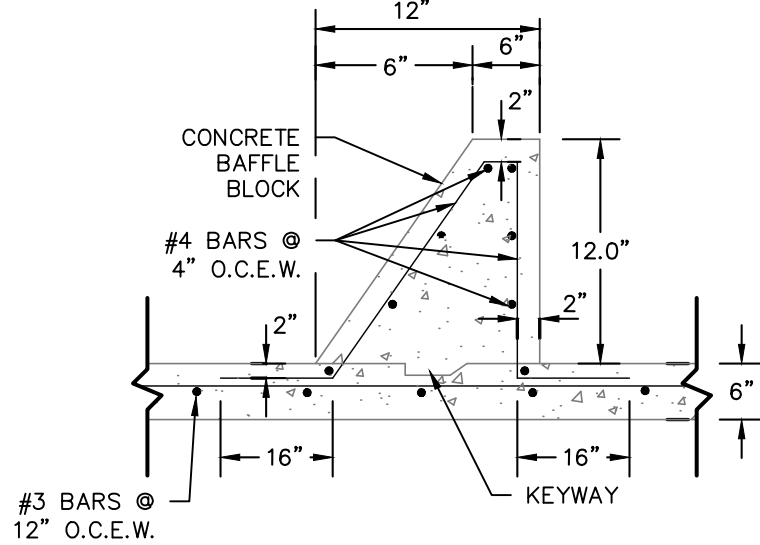
**CURB ARMOR
DETAIL**
NOT-TO-SCALE

BAFFLE BLOCKS CALCULATIONS

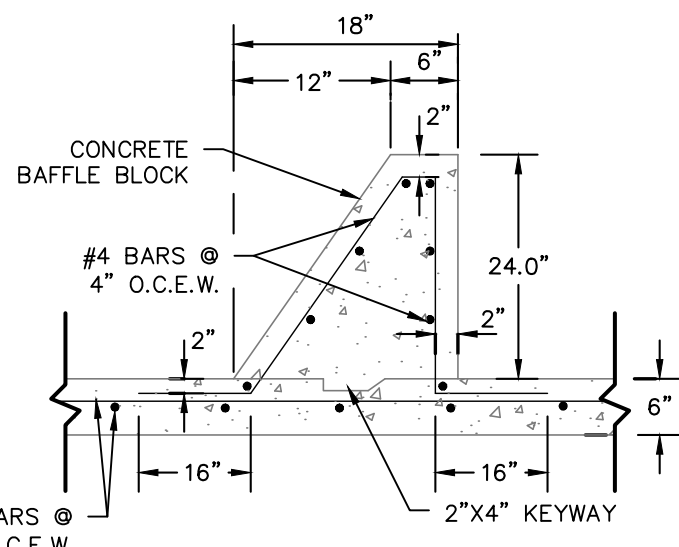
BAFFLE BLOCK DESIGN			
Out flow Discharge	1529	cfs	
Flow Width =	76	ft	
Unit flow q =	20.10	cfs/ft	
$V_c = (q * g)^{1/3} =$	8.65	ft/sec	$g = 32.2$
$V_c = q / V_c =$	2.32	ft	
Baffle Height, $H = 0.8 * V_c =$	1.86	ft, use	2 ft
Baffle Width = $1.5 * H =$			3.00 ft
Baffle spacing (horizontal) = $1.5 * H =$			3.00 ft
Spacing (measures along apron) between baffle rows, $L = 2 *$			4.00 ft
Velocity After Baffle Blocks, $V_a =$	5.92	ft/sec	



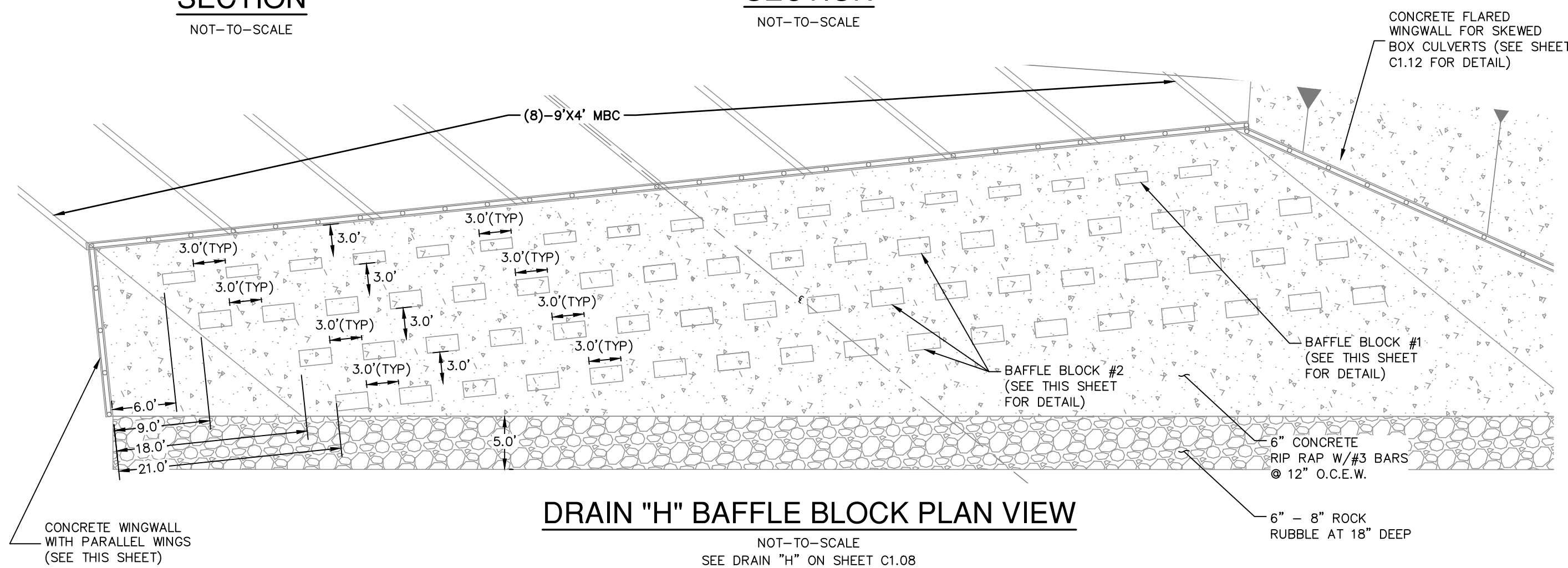
BAFFLE BLOCKS DETAIL
NOT-TO-SCALE



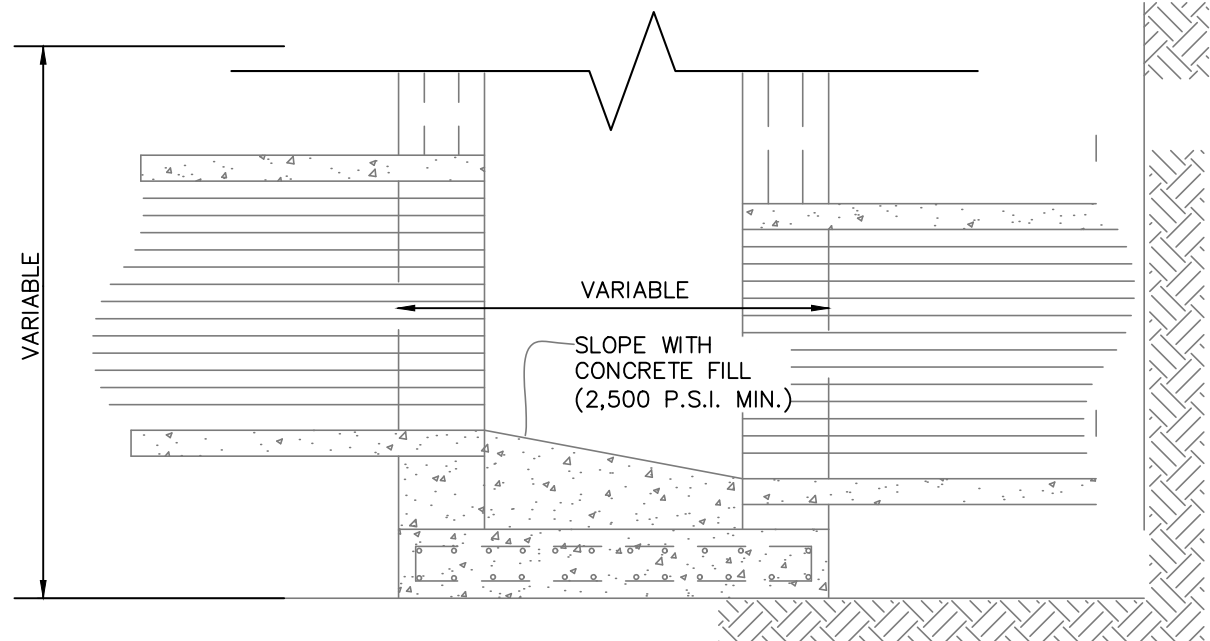
**BAFFLE BLOCK #1 DETAIL
SECTION**
NOT-TO-SCALE



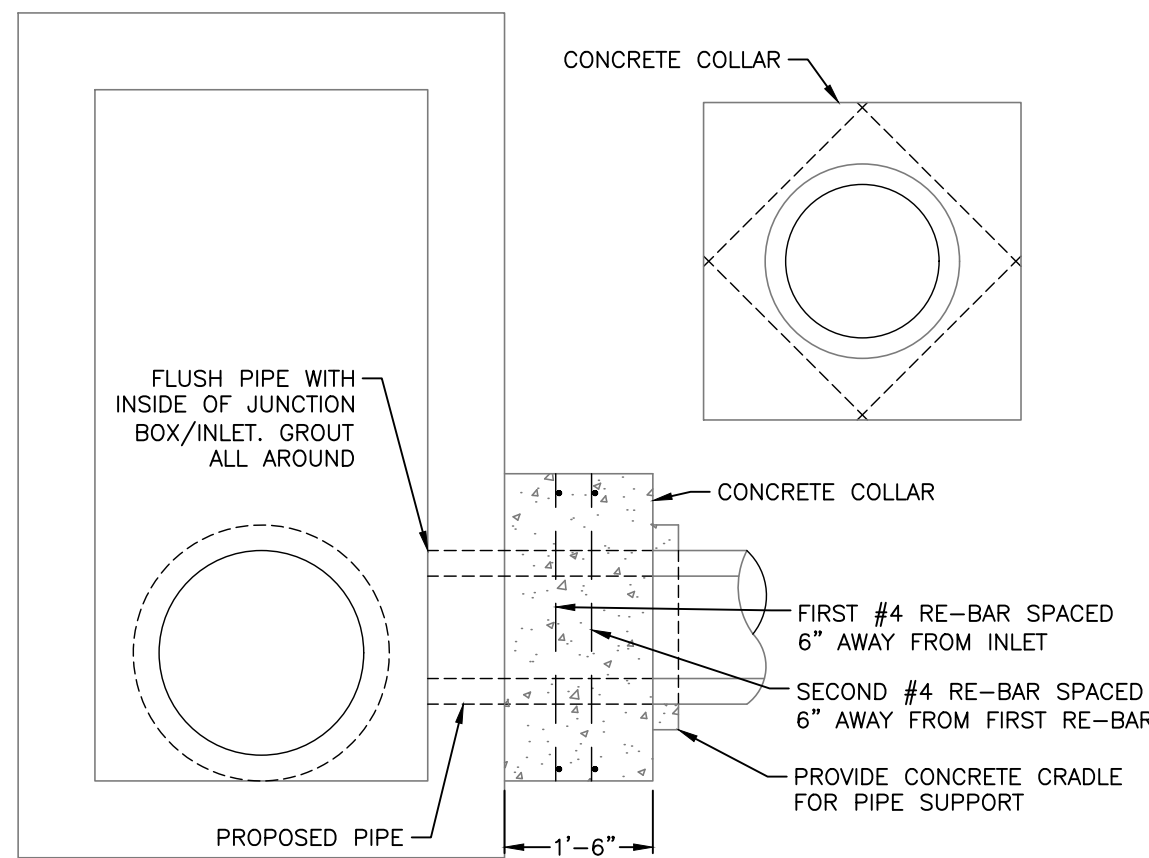
**BAFFLE BLOCK #2 DETAIL
SECTION**
NOT-TO-SCALE



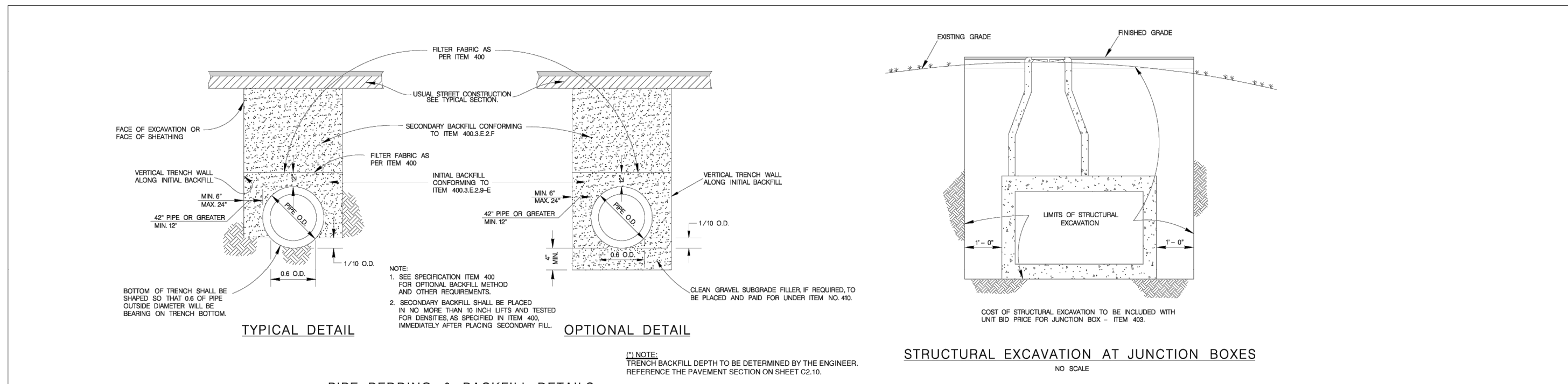
DRAIN "H" BAFFLE BLOCK PLAN VIEW
NOT-TO-SCALE
SEE DRAIN "H" ON SHEET C1.08



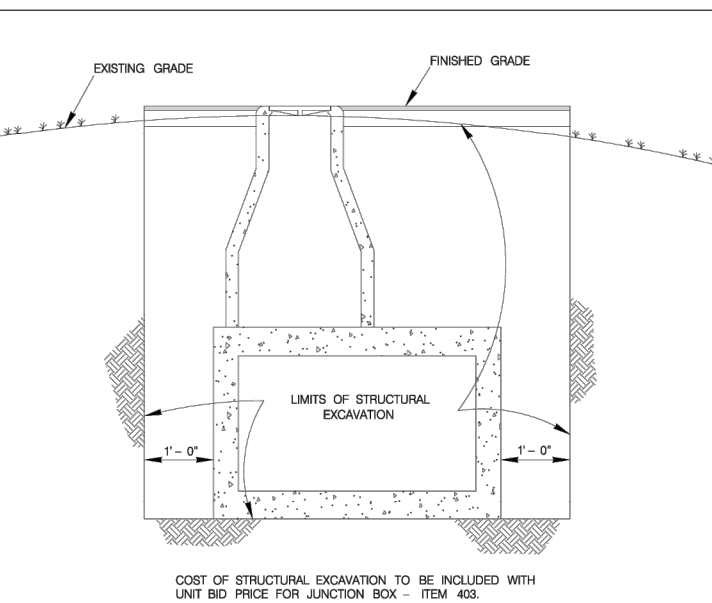
GROUTED INVERT DETAIL
NOT-TO-SCALE



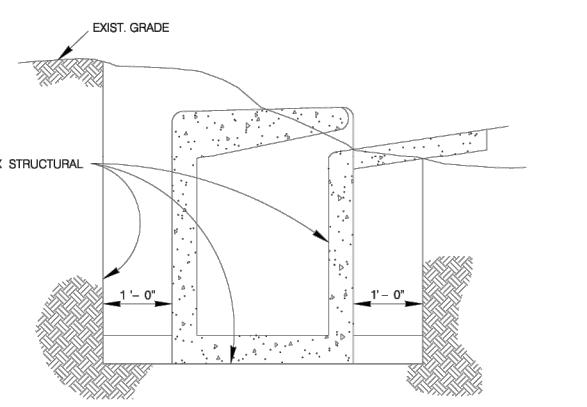
CONCRETE COLLAR DETAIL
NOT-TO-SCALE



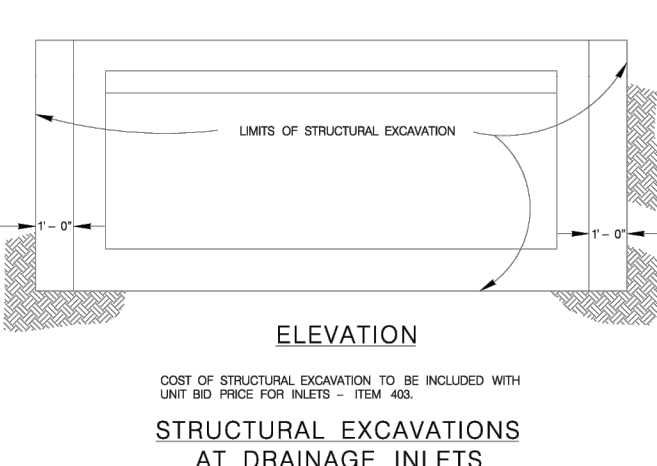
PIPE BEDDING & BACKFILL DETAILS



STRUCTURAL EXCAVATION AT JUNCTION BOXES
NO SCALE



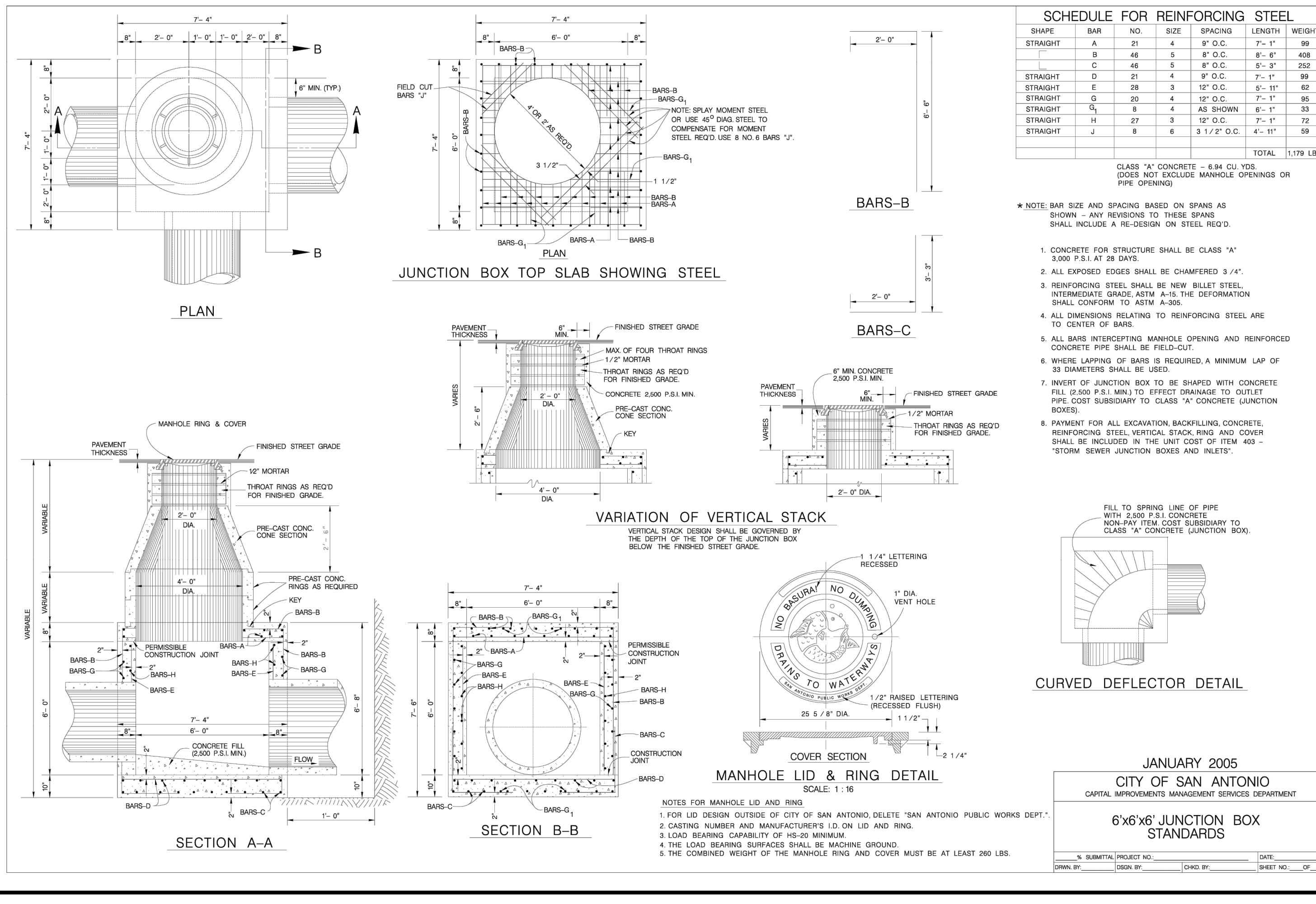
SIDE VIEW



ELEVATION

**STRUCTURAL EXCAVATIONS
AT DRAINAGE INLETS**
NO SCALE

MAY 2009			
CITY OF SAN ANTONIO			
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT			
PIPE BEDDING & MISCELLANEOUS DRAINAGE DETAILS			
% SUBMITTAL/PROJECT NO.	DATE		
DRAWN BY	DESIGN BY	CHECKED BY	SHEET NO. OF

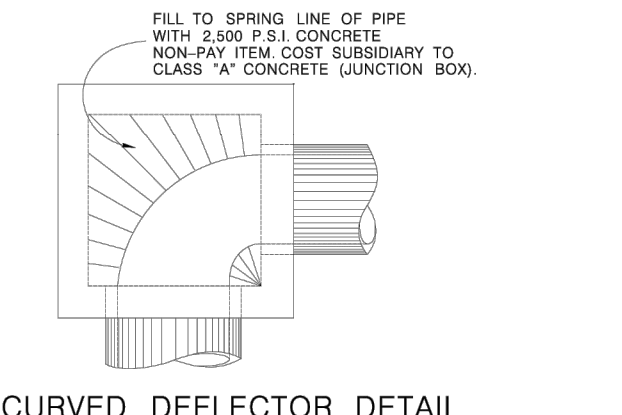


SHAPE	BAR	NO.	SIZE	SPACING	LENGTH	WEIGHT
STRAIGHT	A	21	4	9" O.C.	7'-1"	99
	B	46	5	8" O.C.	6'-6"	408
	C	46	5	8" O.C.	5'-3"	282
STRAIGHT	D	21	4	9" O.C.	7'-1"	99
STRAIGHT	E	28	3	12" O.C.	5'-11"	62
STRAIGHT	G	20	4	12" O.C.	7'-1"	95
STRAIGHT	H	8	4	AS SHOWN	6'-1"	33
STRAIGHT	I	27	3	12" O.C.	7'-1"	72
STRAIGHT	J	8	6	3 1/2" O.C.	4'-11"	59
TOTAL						1,178 LBS.

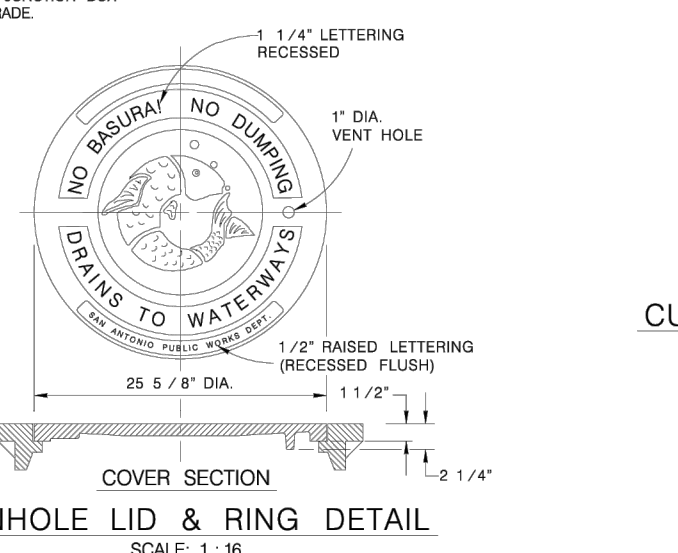
CLASS "A" CONCRETE - 6,84 C.U. YDS.
(DOES NOT INCLUDE MANHOLE OPENINGS OR PIPE OPENING)

* NOTE: BAR SIZE AND SPACING BASED ON SPANS AS SHOWN - ANY REVISIONS TO THESE SPANS SHALL INCLUDE A RE-DESIGN ON STEEL REQ'D.

- CONCRETE FOR STRUCTURE SHALL BE CLASS "A" 3,000 P.S.I. AT 28 DAYS.
- ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4".
- REINFORCING STEEL SHALL BE NEW BILLET STEEL. INTERMEDIATE GRADE ASTM A-36 IS THE DEFORMATION SHALL CONFORM TO ASTM A-305.
- ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.
- ALL BARS INTERCEPTING MANHOLE OPENING AND REINFORCED CONCRETE PIPE SHALL BE FIELD-CUT.
- WHERE LAPPING OF BARS IS REQUIRED, A MINIMUM LAP OF 36 DIAMETERS SHALL BE USED.
- INVERT OF JUNCTION BOX TO BE SHAPED WITH CONCRETE FILL (2,500 P.S.I. MIN.) TO EFFECT DRAINAGE TO OUTLET PIPE. COST SUBSIDIARY TO CLASS "A" CONCRETE (JUNCTION BOXES).
- PAVEMENT FOR ALL EXCAVATION BACKFILLING, CONCRETE REINFORCING STEEL, VERTICAL STACK, RING AND COVER SHALL BE INCLUDED IN THE UNIT COST OF ITEM 403 - "STORM SEWER JUNCTION BOXES AND INLETS".



CURVED DEFLECTOR DETAIL



MANHOLE LID & RING DETAIL
SCALE: 1:16

JANUARY 2005			
CITY OF SAN ANTONIO			
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT			
6'x6'x6" JUNCTION BOX STANDARDS			
% SUBMITTAL/PROJECT NO.	DATE		
DRAWN BY	DESIGN BY	CHECKED BY	SHEET NO. OF

NOTES FOR MANHOLE LID AND RING:
1. FOR LID DESIGN OUTSIDE OF CITY OF SAN ANTONIO, DELETE "SAN ANTONIO PUBLIC WORKS DEPT."
2. CASTING NUMBER AND MANUFACTURER'S I.D. ON LID AND RING.
3. LOAD BEARING CAPABILITY OF HS-20 MINIMUM.
4. THE LOAD BEARING SURFACES SHALL BE MACHING GRIND.
5. THE COMBINED WEIGHT OF THE MANHOLE RING AND COVER MUST BE AT LEAST 280 LBS.

NO.	REVISION	DATE
1	TURN LANE AND CULVERT	11/20/2024



**PAPE-DAWSON
ENGINEERS**
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008860

SAGE RUN, PHASE-2
SAN ANTONIO, TEXAS
DRAIN DETAILS

PLAT NO.	22-11800755
JOB NO.	12431-01
DATE	NOVEMBER 2024
DESIGNER	CB
CHECKED	VS
DRAWN	JS
SHEET	C1.14

$C_z = 30'$
 $G_u = 12.13'$
 $G_d = 52.13'$
 $L_u = 76.32'$
 $L_p = 112.51'$
 $L_d = 0'$

$C_z = 30'$
 $G_u = 10.42'$
 $G_d = 50.42'$
 $L_u = 88.70'$
 $L_p = 111.99'$
 $L_d = 0'$

$D_u = 16.15'$
 $D_d = 56.15' > C_z$

TOTAL LENGTH OF
 NEED = 285.86'

PROJECT LIMITS

100 YR FLOODPLAIN

EXISTING CONTOUR

PROPOSED WATER

PROPOSED SEWER

PROPOSED STORM DRAIN

EXISTING STORM DRAIN

FLOW ARROW

690

W

SS

The diagram illustrates the proposed storm drain installation. It shows the project limits, the 100-year floodplain, the existing contour, the proposed water line, the proposed sewer line, and the proposed storm drain. The existing storm drain is shown as a dashed line. The flow arrow indicates the direction of flow.

1. A BEAR COUNTY ROW PERMIT MUST BE OBTAINED BEFORE WORKING IN BEAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ANY ADDITIONAL SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
2. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES AND DRAINAGE STRUCTURES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION TO VERIFY SIZE, GRADE AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ADDITIONALLY, THE CONTRACTOR SHALL SHOW ALL UTILITIES ON THE PLANS OR NOT, SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR, AT HIS EXPENSE.
3. ALL CONCRETE FOR TxDOT DRAINAGE STRUCTURES SHALL MEET TxDOT SPECIFICATIONS. ALL OTHER CONCRETE SHALL BE CLASS "A" 3000 PSI CYLINDER STRENGTH IN 28 DAYS.
4. REFERENCE DRAINAGE DETAILS FOR PIPE TRENCH DETAILS, BOX CULVERT, HEADWALL, AND WINGWALL CONSTRUCTION DETAILS, AND BOX CULVERT BEDDING AND EXCAVATION LIMITS.
5. CONTRACTOR SHALL GROUT ALL CURB INLETS AND JUNCTION BOXES TO PROVIDE FOR POSITIVE DRAINAGE.
6. EARTHEN CHANNELS WILL BE VEGETATED BY SEEDING OR SODDING. 85% OF THE CHANNEL SURFACE MUST HAVE ESTABLISHED VEGETATION BEFORE THE CITY OF SAN ANTONIO WILL ACCEPT.
7. CONTRACTOR SHALL MATCH TOP OF CHANNEL TO NATURAL GROUND SURFACE AND MAINTAIN A MINIMUM CHANNEL DEPTH OF "D" AS SHOWN IN THE PROFILE.

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE PROPOSED INSTALLATION SITE WITHIN THE PROJECT AREA AND/OR IMPORTANT CONSTRUCTION/ GEOTECHNICAL/ EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS AND THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES AND ADVISE THE ADEQUACY OF THE EXISTING SAFETY PROTECTION THAT COMPLY WITH AS MINIMUM, ASHES STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING TRENCHING ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARE SHOWN SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOT BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

3/22/24



TAYLOR GLENN DAWSON
128537
LICENSED
PROFESSIONAL ENGINEER

**PAPE-DAWSON
PDA ENGINEERS**

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10228600

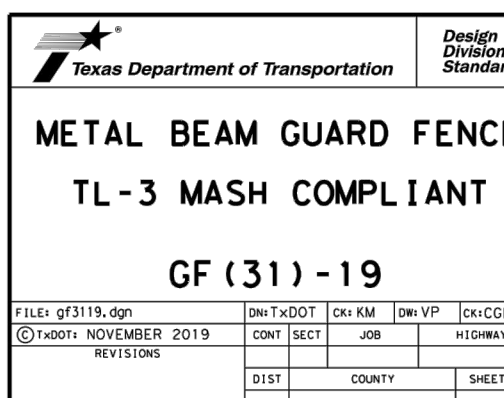
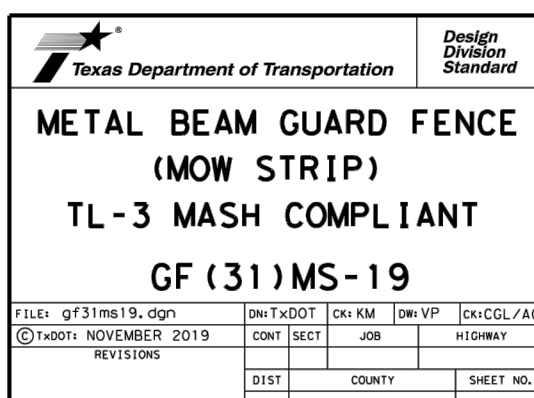
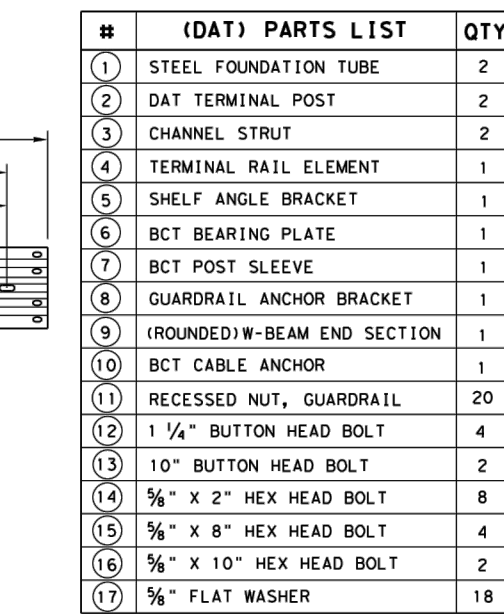
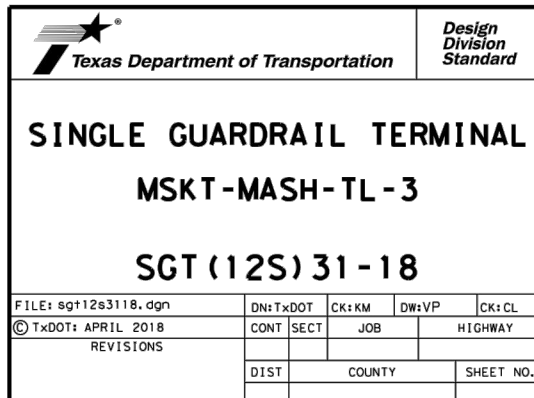
SAGE RUN, PHASE-2

SAN ANTONIO, TEXAS

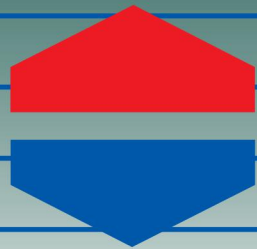
DRAIN DETAILS

DRAIN DETAILS

PLAT NO. 22-11800755
 JOB NO. 12431-01
 DATE FEBRUARY 2024
 DESIGNER CB
 CHECKED VS DRAWN PW
 SHEET C1.15



Date: Mar-22-2024 9:59am User ID: anaghaan
 File: P:\124\31\NOTES\DESIGN\SAGE RUN\Curlex\Phase-2\0601-1243101_SRP112.dwg



Curlex® Blankets

Excelsior Erosion Control Blankets

Product Description

American Excelsior Company is the inventor of biodegradable erosion control blankets. Developed in the early 60's, Curlex excelsior blankets are specifically designed to actually promote ideal growing conditions for grass seed, while simultaneously protecting topsoil from wind and water erosion. Curlex excelsior blankets have long passed the test of time. By design, Curlex blankets have a built-in swell factor - wet curled excelsior fibers slightly expand in thickness and interlock to form a strong, fiber matrix. This allows the fibers to provide intimate contact with local terrain. Water flow is trained to follow the curled fiber matrix. The roughness of the curled excelsior matrix slows the velocity to a point where gravity takes over, which allows moisture to slowly seep into the topsoil to promote ideal growing conditions.

MATERIAL CHARACTERISTICS

Curlex blankets consist of unique softly barbed, interlocking, curled, Aspen excelsior fibers. They are weed seed free. Curlex blankets are available with a variety of environmentally sensitive and/or stronger netting types to match job site requirements. We offer a green color-coded plastic netting for applications requiring UV resistance strength and longevity. Our photodegradable QuickMow™ netting is recommended for urban, golf course, and certain roadside projects. It is color-coded white to identify it as a rapid break-down, polypropylene netting designed for use in areas to be mowed. Also available is our FibreNet™ - 100% biodegradable netting - for use in critical environmentally sensitive areas.

Most straight-line fiber blankets draw the line at 270 g/m² (.50 lb/yd²), but not Curlex. At just under 400 g/m² (.75 lb/yd²) Curlex blankets bring 50% more erosion control fibers to your job site. Curlex blankets are available in natural Aspen or QuickGRASS® (green). Combine that with a roll that's wider than conventional blankets and you have today's most effective and efficient, multi-purpose degradable erosion control blanket. Curlex excelsior blankets are available individually wrapped or in master packs to allow for mechanical unloading and stacking.

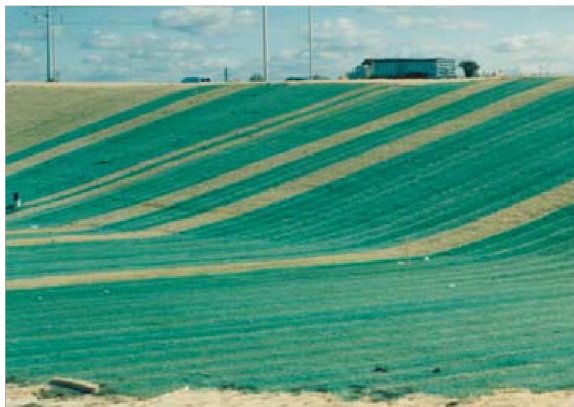
PERFORMANCE CAPABILITIES

Product	Slopes	Shear Stress Rating
Curlex I	2H:1V & flatter	84 Pa (1.75 lb/ft ²)
Curlex II	1.5H:1V & flatter	108 Pa (2.25 lb/ft ²)

TYPICAL APPLICATIONS

- Highway embankments, ditch bottoms and slopes, bridges, approaches and medians
- Residential, commercial, & industrial developments
- Urban drainage, stream banks, and waterways
- Golf course fairways, roughs, waterways, & drop structures
- Landfill caps, side slopes, and let down structures
- Pipeline right-of-ways

American
Excelsior
Company®
Earth Science Division
Arlington, Texas (800) 777-SOIL • www.curlex.com



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Excelsior
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Earth Science Division



Curlex® Blankets

Excelsior Erosion Control Blankets

SUGGESTED SPECIFICATIONS

Curlex Single Net (Curlex I)

A specific cut of Great Lakes Aspen curled wood excelsior with 80% six-inch fibers or greater fiber length. It shall be of consistent thickness, with fibers evenly distributed throughout the entire area of the blanket. The top of each blanket shall be covered with photodegradable or biodegradable netting. Material shall not contain any weed seed or chemical additives.

Specifications

Recommended Use: Slopes to 2:1, Channel to 7 ft/s, shear stress to 1.75 lb/ft²
Roll Sizes: 4' x 112.5' (50 yd²), 8' x 112.5' (100 yd²), 16' x 112.5' (200 yd²)
Standard Weight*: .73 lb/yd²
Netting Options: Green, QuickMow White (90 day), FibreNet
Color: Natural Aspen or QuickGRASS Green

Curlex Double Net (Curlex II)

A specific cut of Great Lakes Aspen curled wood excelsior with 80% six-inch fibers or greater fiber length. It shall be of consistent thickness, with fibers evenly distributed throughout the entire area of the blanket. The top and bottom of each blanket shall be covered with photodegradable or biodegradable netting. Material shall not contain any weed seed or chemical additives.

Specifications

Recommended Use: Slopes to 1.5:1, Channels to 9 ft/s, shear stress to 2.25 lb/ft²
Roll Sizes: 4' x 112.5' (50 yd²), 8' x 112.5' (100 yd²), 16' x 112.5' (200 yd²)
Standard Weight*: .73 lb/yd²
Netting Options: Green, QuickMow White (90 day), FibreNet
Color: Natural Aspen or QuickGRASS Green

*Weight is based on a dry fiber weight basis at time of manufacture. Baseline moisture content of Great Lakes Aspen Excelsior is 22%.

Installation

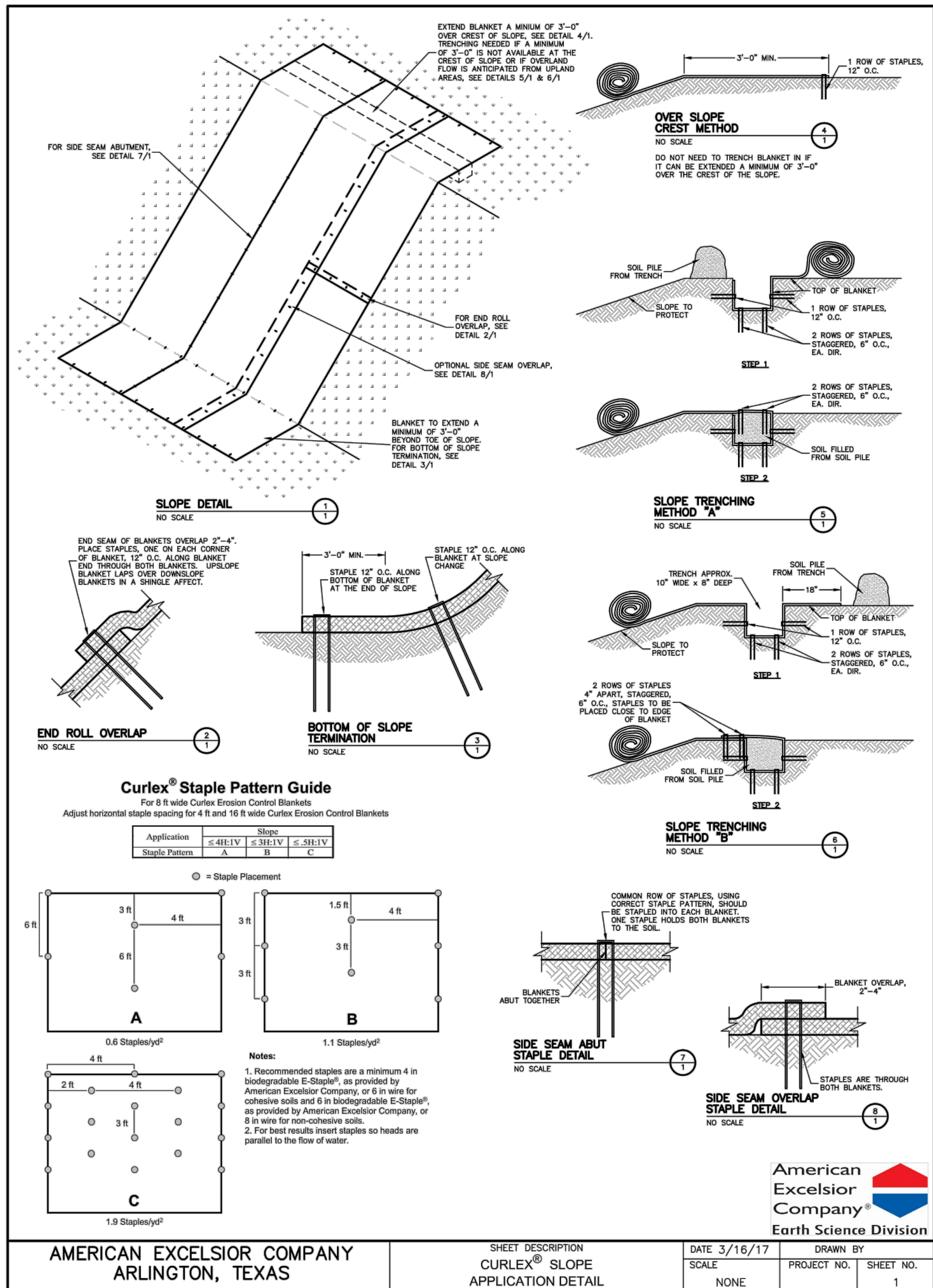
Before installing Curlex blankets, the seedbed shall be inspected by the Owner's Representative to ensure it has been properly compacted and fine graded to remove any existing rills. It shall be free of obstructions, such as tree roots, projections such as stones, and other foreign objects. Grass seed shall match soil conditions to allow for maximum germination, dense vegetation, and a structural root system. Contractor shall proceed when satisfactory conditions are present. After the area has been properly shaped, seeded, fertilized, and compacted, locate the start of the roll, making sure the roll is facing toward the area to be covered, and then roll out the blanket. Blankets shall be rolled out flat, even, and smooth without stretching the material then anchored to the subgrade.

Slopes: It is recommended that the blankets be installed in the same direction as the water flow; however, on short slopes it may be more practical to install horizontally across the width of the application. If more than one width is required, simply abut the edges together and secure the blankets with a common row of biodegradable staples, steel staples, or stakes. Overlapping of Curlex excelsior blankets is not required or recommended. An exception is waterway slopes.

Channels: Curlex blankets shall be centered to offset a seam in the middle of the waterway. They shall be installed in the same direction as the water flow. The adjoining blankets shall be installed away from the center of channel and concentrated water flow. They shall be secured by a common row of staples. It is usually not necessary to overlap Curlex blankets; however, a 2" shingle type installation shall be used in waterway slopes applications. Curlex blanket installation should continue up the side slopes 3' above the anticipated high water elevation. Flanks exposed to runoff, or sheet flow, must be protected by a check slot or trenched. Curlex blankets shall be trenched at the start of the channel and anchored using a staggered staple pattern at end of roll overlaps and end of roll terminations.

Disclaimer: Curlex is a system for erosion control and re-vegetation on slopes and channels. American Excelsior Company (AEC) believes that the information contained herein to be reliable and accurate for use in erosion control and re-vegetation applications. However, since physical conditions vary from job site to job site and even within a given job site, AEC makes no performance guarantees and assumes no obligation or liability for the reliability or accuracy of information contained herein for the results, safety, or suitability of using Curlex, or for damages occurring in connection with the installation of any erosion control product whether or not made by AEC or its affiliates, except as separately and specifically made in writing by AEC. These specifications are subject to change without notice.

If you would like to receive more information or consult with one of our Customer Care Center Specialists, please call us toll free at (888-352-9582)
PDF download specifications available in the Technical Support Library at www.curlex.com



NOTES:

SOIL RETENTION BLANKET TO BE INSTALLED ALONG INVERT AND SIDE SLOPES OF CHANNEL. SIDE SLOPES TO BE PROTECTED TO A HEIGHT OF 2'. SOIL RETENTION BLANKET TO HAVE THE FOLLOWING CHARACTERISTICS AS A MINIMUM:

- FOR USE ON 3:1 SIDE SLOPES
- FOR USE WITH VELOCITIES > 6 FPS

DATE	
NO.	
REVISION	



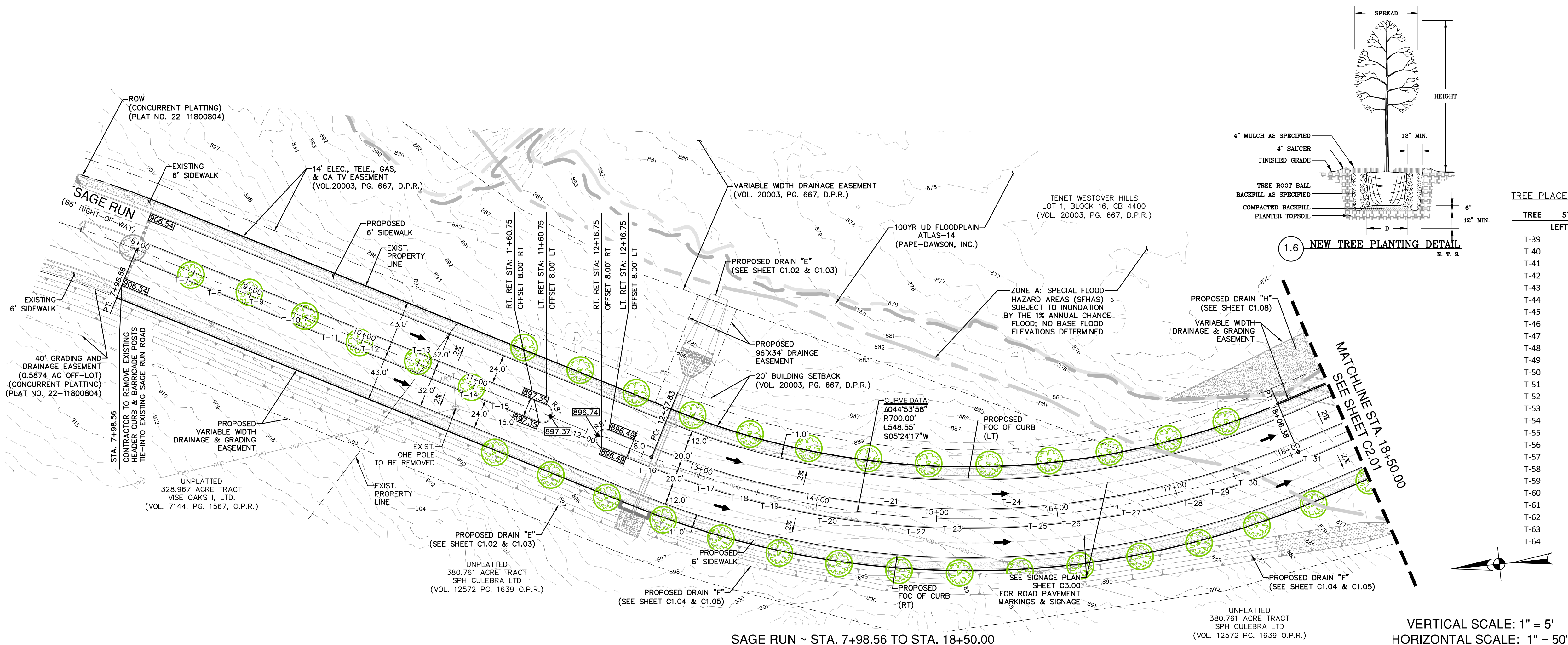
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2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #170 | TEXAS SURVEYING FIRM #10028600

SAGE RUN, PHASE-2
SAN ANTONIO, TEXAS
DRAIN DETAILS

PLAT NO.	22-11800755
JOB NO.	12431-01
DATE	FEBRUARY 2024
DESIGNER	CB
CHECKED	VS
DRAWN	JS
SHEET	C1.17

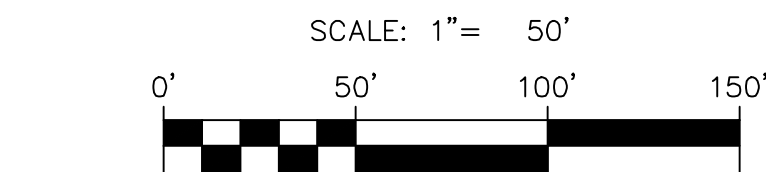
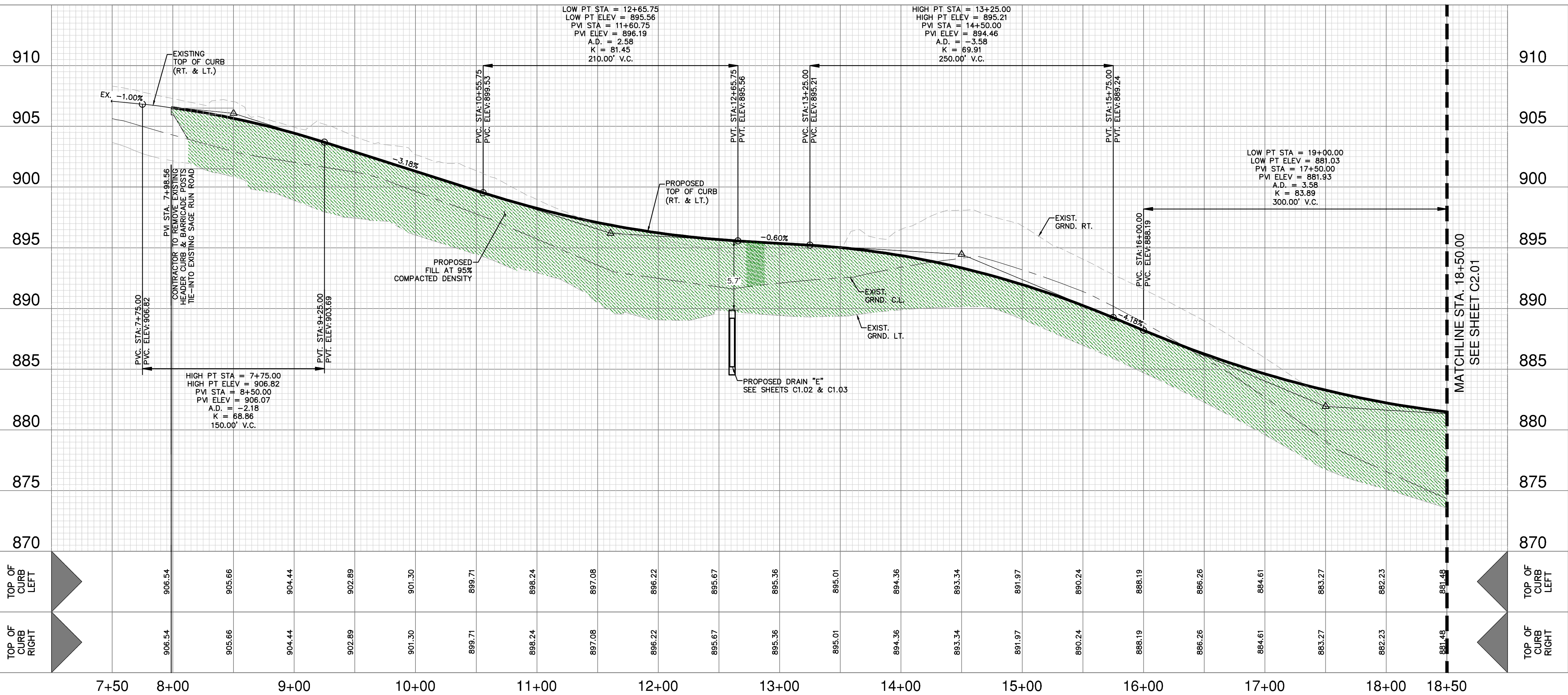
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SAGE RUN ~ STA. 7+98.56 TO STA. 18+50.00

VERTICAL SCALE: 1" = 5'
HORIZONTAL SCALE: 1" = 50'



STREET LEGEND

PROJECT LIMITS	---
MAINTAIN GUTTER	---
EXISTING CONTOUR	---
WHEELCHAIR RAMP	① WCR
CENTERLINE	CL
RADIUS POINT	RP
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
DRAINAGE FLOW ARROW	→
TOP OF CURB SPOT ELEVATION	857.30
PAVEMENT ELEVATION	857.00(P) x
WASHOUT CROWN SECTION	---
SIDEWALK (SEE SHEET C3.00 FOR DEVELOPER/HOMEBUILDER RESPONSIBILITY)	---
DRIVEWAY	---
STREETSCAPE TREE	①

TREE PLACEMENT

TREE	STATION
T-39	11+26
T-40	11+76
T-41	12+26
T-42	12+78
T-43	13+31
T-44	13+84
T-45	14+38
T-46	14+91
T-47	15+45
T-48	15+98
T-49	16+51
T-50	17+05
T-51	17+58
T-52	20+29
T-53	20+79
T-54	21+28
T-55	21+75
T-56	22+22
T-57	22+69
T-58	23+16
T-59	23+63
T-60	24+10
T-61	24+57
T-62	25+04
T-63	25+51
T-64	25+98

STREETSCAPE TREE PLANTING NOTES

- SPECIES OF TREES TO BE DETERMINED BY DEVELOPER'S PROJECT LANDSCAPE ARCHITECT TO CONFORM WITH THE STREETSCAPE PLANTING STANDARDS. LANDSCAPE ARCHITECT MUST OBTAIN APPROVAL OF SPECIES FROM THE CITY ARBORIST PRIOR TO PLANTING.
- DEVELOPER TO PROVIDE IRRIGATION ON PLANTED STREET TREES FOR A MINIMUM OF 3 YEARS.
- ALL LANDSCAPING SHALL COMPLY WITH THE CLEAR VISION AREAS DEFINED BY THE LATEST VERSION OF AASHTO'S "A" POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS.
- TYPES OF TREES AND SPACING ARE BASED ON UNDERGROUND ELECTRIC. IF OVERHEAD ELECTRIC IS REQUIRED BY COPS, PLANS WILL BE REVISED TO REFLECT CHANGES IN SIZE, TYPE, AND SPACING OF TREES, PER THE UDC.

**** (57)-TOTAL MEDIUM TREES TO BE PLANTED ALONG MEDIAN OF PHASE 2. (51)-MEDIUM TREES REQUIRED FOR PHASE 2 & (6)-ADDITIONAL MEDIUM TREES TO BE PLANTED FROM PHASE 1 REQUIREMENTS. REFERENCE TREE PLACEMENT CHART FOR STATIONS OF TREE LOCATIONS**

SIDEWALK NOTE:

THE CONSTRUCTION OF SIDEWALKS ADJACENT TO ALL 900 SERIES LOTS WILL BE THE RESPONSIBILITY OF THE DEVELOPER AS SHOWN ON THE OVERALL SIGNAGE PLAN (SHEET C3.00). REFER TO SHEET C3.00 FOR LOCATIONS OF SIDEWALK CONSTRUCTION WHERE SIDEWALKS ARE NOT SHOWN

STREET SELECT FILL NOTE:

FILL MATERIAL SHOULD BE NATIVE ON-SITE MATERIAL, FREE OF DELETERIOUS MATERIAL WITH A MINIMUM CBR VALUE OF 4.0 AND A PI MAXIMUM OF 20. THE GRAVEL SIZE SHOULD NOT EXCEED 3 INCHES IN DIAMETER. LIME APPLICATION RATE SHOULD BE RE-EVALUATED FOR THE FILL MATERIAL. THE MATERIAL SHOULD BE PLACED AS PER APPLICABLE CITY OR COUNTY GUIDELINES.

WHEEL CHAIR NOTE:

WHEEL CHAIR RAMP (WCR) TO BE CENTERED ON STATION NOTED BELOW. ELEVATION SHOWN ARE TOP OF CURB AND NOT GUTTER

STREET NOTES:

- A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.
- CONTRACTOR SHALL MATCH EXISTING PAVEMENT AT TIE-IN. IF EXISTING PAVEMENT ELEVATION DIFFERS SIGNIFICANTLY, CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONTINUING WORK.
- SIDEWALKS SHALL BE CONSTRUCTED 3-FT FROM THE BACK OF CURB FOR ALL LOCATIONS WHERE THE SIDEWALK IS SHOWN OFFSET. REFER TO STREET DETAIL SHEET FOR SIDEWALK AND RAMP DETAILS.
- NO PERMANENT STRUCTURES HIGHER THAN 3 FEET, AND LOWER THAN 8 FEET ABOVE THE PAVEMENT, INCLUDING STRUCTURES, WALLS, FENCES, AND VEGETATION, SHALL BE CONSTRUCTED OR ALLOWED WITHIN THE CLEAR VISION EASEMENT. CONTRACTOR SHALL GRADE AREAS WITHIN CLEAR VISION EASEMENTS SUCH THAT THE ELEVATION WITHIN THE CLEAR VISION EASEMENT IS NOT HIGHER THAN 3 FEET ABOVE THE ADJACENT TOP OF PAVEMENT.
- DRIVEWAYS SHOWN ON THIS PLAN ARE FOR THE SOLE PURPOSE OF INDICATING A POTENTIAL CONFLICT WITH CURB RAMP, DRAINAGE INFRASTRUCTURE, OR OTHER CONFLICT. DRIVEWAY LOCATION IS SUBJECT TO CHANGE BASED ON HOME SELECTION AND FINAL LOT DESIGN.
- CHANGES IN THE SIDEWALK LOCATION FOR A MAXIMUM LINEAR DISTANCE OF TWO HUNDRED (200) FEET ARE PERMITTED TO BE APPROVED BY THE FIELD INSPECTOR WITHOUT AMENDING THE STREET PLAN OR UTILITY LAYOUT PER UDC SECTION 35-506 (Q)(6).

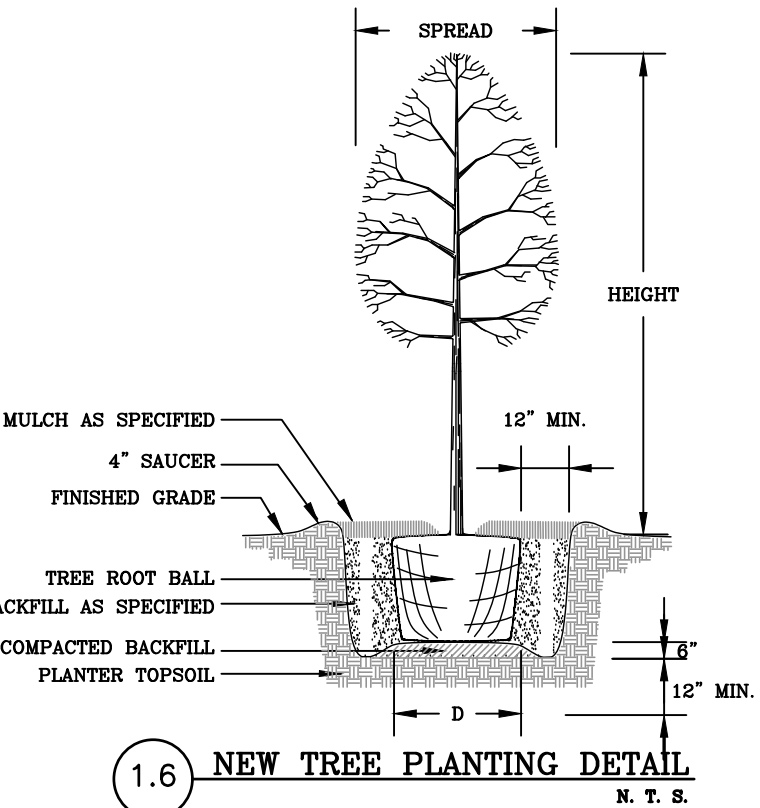
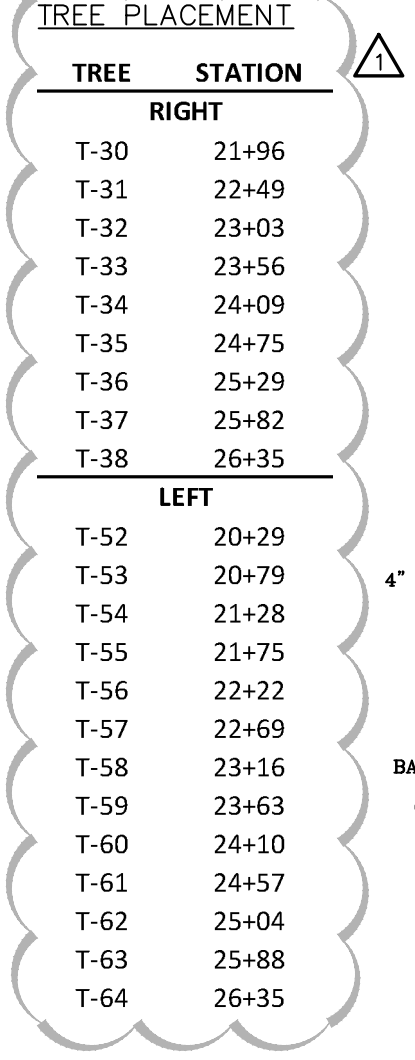
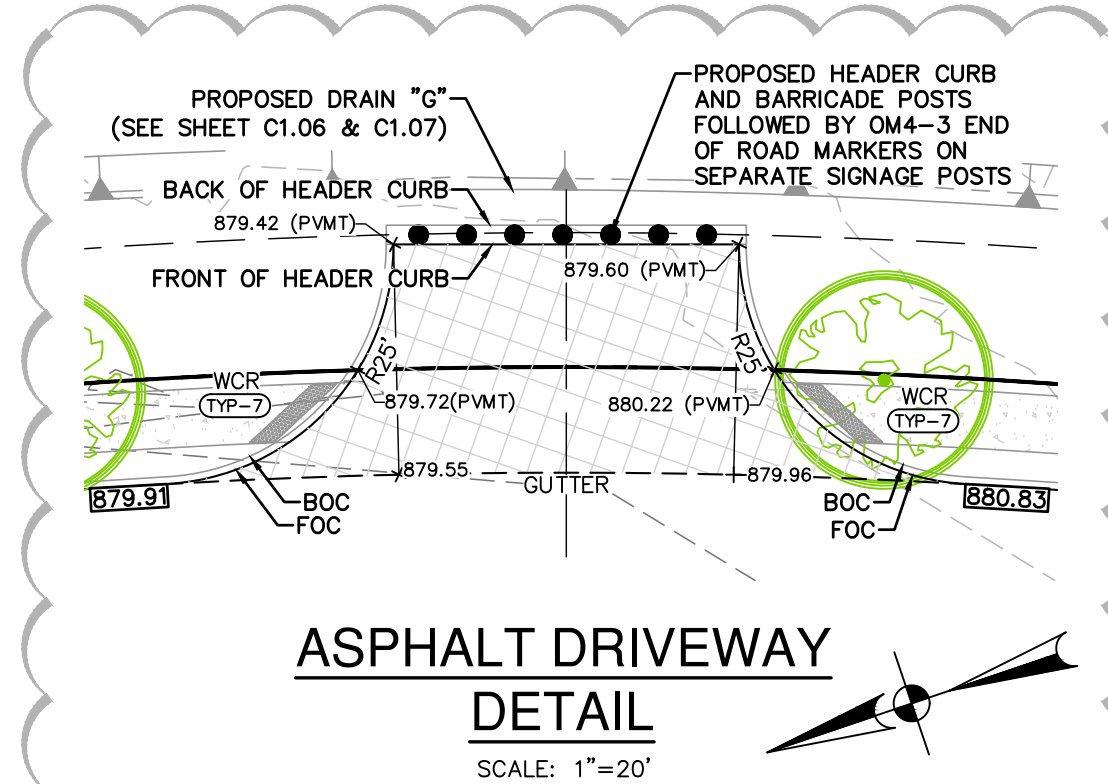
DATE	
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REVISION	



PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008860

SAGE RUN, PHASE-2
SAN ANTONIO, TEXAS
SAGE RUN ~ STA. 7+98.56 TO STA. 18+50.00
STREET PLAN & PROFILE

PLAT NO.	22-11800755
JOB NO.	12431-01
DATE	FEBRUARY 2024
DESIGNER	CB
CHECKED	JA
DRAWN	CB
SHEET	C2.00



TREE	STATION
RIGHT	
T-30	21+96
T-31	22+49
T-32	23+03
T-33	23+56
T-34	24+09
T-35	24+75
T-36	25+29
T-37	25+82
T-38	26+35
LEFT	
T-52	20+29
T-53	20+79
T-54	21+28
T-55	21+75
T-56	22+22
T-57	22+69
T-58	23+16
T-59	23+63
T-60	24+10
T-61	24+57
T-62	25+04
T-63	25+88
T-64	26+35


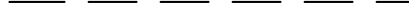








KEY LEGEND:

REMOVE EXISTING SANITARY SEWER MANHOLE "A4"
(SAWS ID # 1168634)
SAWS JOB NO. 19-1610
C.L. STA. 21+83.20 O/S 7.30' RT

20' BUILDING SETBACK
(VOL. 2000.3, PG. 667, D.P.R.)

SEE SIGNAGE PLAN SHEET C3.00 FOR ROAD
PAYMENT MARKINGS & SIGNAGE

INSTALL PLUMBING SS MANHOLE:
1'-48" DIA SS MH
TOP = 882.55
INV IN = 867.05
INV OUT = 866.95

PROJECT LIMITS	
MAINTAIN GUTTER	
EXISTING CONTOUR	
WHEELCHAIR RAMP	 WCR
CENTERLINE	CL
RADIUS POINT	RP
POINT OF CURVATURE	PC
POINT OF TANGENCY	PT
RETURN	RET
DRAINAGE FLOW ARROW	
TOP OF CURB STOP ELEVATION	
PAVEMENT ELEVATION	857.00(P) x
WASHOUT CROWN SECTION	
SIDEWALK (SEE SHEET C3.00 FOR DEVELOPER/HOMEBUILDER RESPONSIBILITY)	
DRIVEWAY	
STREETSCAPE TREE	

1. SPECIES OF TREES TO BE DETERMINED BY DEVELOPER'S PROJECT LANDSCAPE ARCHITECT TO CONFORM WITH THE STREETSCAPE PLANTING SPECIFICATIONS AND THE ARCHITECT MUST OBTAIN APPROVAL OF SPECIES FROM THE CITY ARBORIST PRIOR TO PLANTING.
2. DEVELOPER TO PROVIDE IRRIGATION ON PLANTED STREET TREES FOR A MINIMUM OF 3 YEARS.
3. ALL LANDSCAPING SHALL COMPLY WITH THE CLEAR VISION AREAS DEFINED BY THE LATEST VERSION OF ASHTO'S "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS."
4. TYPES OF TREES AND SPACING ARE BASED ON UNDERGROUND ELECTRIC. IF OVERHEAD ELECTRIC IS REQUIRED BY CPS, PLANS WILL BE REVISED TO REFLECT CHANGES IN SIZE, TYPE, AND SPACING OF TREES, PER THE UDC.

**** (5)-(7)-TOTAL MEDIUM TREES TO BE PLANTED ALONG MEDIUM OF PHASE 2. (51)-MEDIUM TREES REQUIRED FOR PHASE 2 & (6)-ADDITIONAL MEDIUM TREES TO BE PLANTED FROM PHASE 1 REQUIREMENTS. REFERENCE TREE PLACEMENT CHART FOR STATIONS OF TREE LOCATIONS**

THE CONSTRUCTION OF SIDEWALKS ADJACENT TO ALL 900 SERIES LOT WILL BE THE RESPONSIBILITY OF THE DEVELOPER AS SHOWN ON THE OVERALL SIGNAGE PLAN (SHEET C3.00). REFER TO SHEET C3.00 FOR LOCATIONS OF SIDEWALK CONSTRUCTION WHERE SIDEWALKS ARE NOT SHOWN.

FILL MATERIAL SHOULD BE NATIVE ON-SITE MATERIAL, FREE OF DELETERIOUS MATERIAL WITH A MINIMUM CBR VALUE OF 4.0 AND A PI MAXIMUM OF 20. THE GRAVEL SIZE SHOULD NOT EXCEED 3 INCHES IN DIAMETER. LIME APPLICATION RATE SHOULD BE RE-EVALUATED FOR THE FILL MATERIAL. THE MATERIAL SHOULD BE PLACED AS PER APPLICABLE CITY OR COUNTY GUIDELINES.

WHEEL CHAIR NOTE:

WHEEL CHAIR RAMPS (WCR) TO BE CENTERED ON STATION NOTED BELOW
ELEVATION SHOWN ARE TOP OF CURB AND NOT CUTTER

STREET NOTES:

BEXAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAY ARE CONSTRUCTED.

2. CONTRACTOR SHALL MATCH EXISTING PAVEMENT AT THE IN-IN. IF EXISTING PAVEMENT ELEVATION DIFFERS SIGNIFICANTLY, CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONTINUING WORK.
3. SIDEWALKS SHALL BE CONSTRUCTED 3'-3 FT FROM THE BACK OF CURB FOR ALL LOCATIONS WHERE THE SIDEWALK IS SHOWING OFFSET. REFERENCE TO STREET DETAIL SHEET FOR SIDEWALK AND RAMP DETAILS.
4. NO PERMANENT STRUCTURES HIGHER THAN 3 FEET, AND LOWER THAN 3 FEET ABOVE THE PAVEMENT, INCLUDING STRUCTURES, WALLS, FENCING AND VEGETATION, SHALL BE CONDUCTED OR ALLOWED WITHIN THE CLEAR VISION EASEMENT. CONTRACTOR SHALL GRADE AREAS WITH CLEAR VISION EASEMENTS SUCH THAT THE ELEVATION WITHIN THE CLEAR VISION EASEMENT IS NOT HIGHER THAN 3 FEET ABOVE THE ADJACENT TOP OF PAVEMENT.
5. DRIVEWAYS SHOWN ON THIS PLAN ARE FOR THE SOLE PURPOSE OF INDICATING A POTENTIAL CONFLICT WITH CURB RAMP, DRAINAGE OR STRUCTURE, OR OTHER CONFLICT. DRIVEWAY LOCATION IS SUBJECT TO CHANGE BASED ON HOME SELECTION AND FINAL LOT DESIGN.
6. CHANGES IN THE SIDEWALK LOCATION FOR A MAXIMUM LINEAR DISTANCE OF FIFTY HUNDRED (200) FEET ARE PERMITTED TO BE APPROVED BY THE UTILITY LAYOUT PER UDC SECTION 355-506 (Q)(6).

[illegible]

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ARTERIAL PAVEMENT SECTION DETAIL								
STREET NAME	STATION	TYPE "D" HMAC	TYPE "C" HMAC	TYPE "B" HMAC	AGGREGATE BASE	LIME TREATED SUBGRADE	GEOGRID (TENSAR TX-5)	CBR
SAGE RUN	7+98.56 TO END	1.5"	2.5"	6.0"	8.0"	6.0"	—	4.0
TEMPORARY TURN AROUND		1.5"	2.5"	6.0"	8.0"	6.0"	—	4.0

*STREETS TRANSITIONS FROM STREET CLASSIFICATIONS OF DIFFERING PAVEMENT WIDTHS SHALL BE CONSTRUCTED WITH PAVEMENT SECTION OF STREET CLASSIFICATION WITH WIDER PAVEMENT SECTION

GENERAL NOTES:

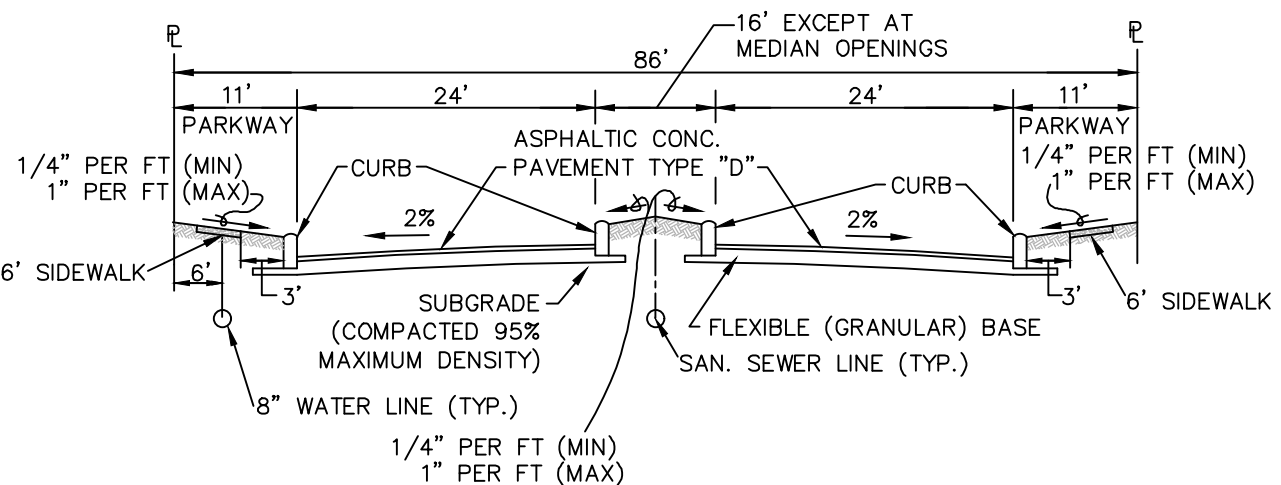
- CONTRACTOR SHALL REFERENCE THE PROJECT PAVEMENT DESIGN REPORT NO. ASA21-058-02 PREPARED BY RABA KISTNER DATED JUNE 7, 2022, AND THE SUPPLEMENTAL LETTER DATED AUGUST 7, 2023.
- CONTRACTOR SHALL RETAIN A GEOTECHNICAL ENGINEER TO VERIFY THE SUB GRADE CONDITION PRIOR TO PLACING ANY BASE MATERIAL. GEOTECHNICAL ENGINEER SHALL DETERMINE THE SUB GRADE CONDITION AND IF LIME STABILIZATION IS REQUIRED.
- GEOTECHNICAL ENGINEER SHOULD VERIFY THE STREET SUBGRADE AT THE TIME OF CONSTRUCTION PRIOR TO PLACEMENT OF AGGREGATE BASE.
- THE FLEXIBLE BASE COURSE SHOULD BE CRUSHED LIMESTONE CONFORMING TO TXDOT STANDARD SPECIFICATIONS, ITEM 247, TYPE A, GRADES 1 OR 2.
- THE MOISTURE CONTENT OF THE FILL SHOULD BE MAINTAINED WITHIN THE RANGE OF OPTIMUM WATER CONTENT TO 3 PERCENTAGE POINTS ABOVE THE OPTIMUM WATER CONTENT UNTIL PERMANENTLY COVERED.
- IN THE EVENT THAT THE CLAY FILL USED IS DIFFERENT THAN THE EXISTING SUBGRADE, THE RECOMMENDATIONS IN THE GEOTECHNICAL REPORT COULD BE INVALIDATED AND THE DESIGN ENGINEER MUST BE CONSULTED TO DETERMINE IF ADDITIONAL CBR TESTING AND THICKER PAVEMENT SECTIONS ARE REQUIRED.
- WHERE PAVEMENT SUBGRADE IS LOCATED WITHIN 2-FEET OF THE EXISTING GROUND SURFACE (STRATUM 1 CLAYS), MOISTURE CONDITIONED SUBGRADE WILL BE REQUIRED. GEOTECHNICAL ENGINEER SHOULD VERIFY THE STREET SUBGRADE AT THE TIME OF CONSTRUCTION PRIOR TO PLACEMENT OF AGGREGATE BASE TO DETERMINE WHERE THE MOISTURE CONDITIONED SUBGRADE IS NEEDED. REFERENCE GEOTECHNICAL ENGINEERING REPORT FOR MORE INFORMATION.
- THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL MATERIAL TESTING WITH THE PROJECT GEOTECHNICAL ENGINEER. TESTING SHALL BE PAID FOR BY THE OWNER.
- FILL MATERIAL SHOULD BE NATIVE ON-SITE MATERIAL, FREE OF DELETERIOUS MATERIAL WITH A MINIMUM CBR VALUE OF 4.0 AND A PI WITHIN RANGE OF 5 AND 20. THE GRAVEL SIZE SHOULD NOT EXCEED 3 INCHES IN DIAMETER. LIME OR CEMENT APPLICATION RATES SHOULD BE RE-EVALUATED FOR THE FILL MATERIAL. THE MATERIAL SHOULD BE PLACED AS PER APPLICABLE CITY OR COUNTY GUIDELINES. CONTRACTOR TO VERIFY EXACT SPECIFICATIONS WITH PROJECT GEOTECHNICAL ENGINEERING REPORT.
- A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN THE BEXAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.

SUBGRADE NOTES:

- IF THE STREET SUBGRADE PLASTICITY INDEX VALUE IS GREATER THAN 20, SUBGRADE STABILIZATION IS NEEDED AS PER CITY OF SAN ANTONIO REQUIREMENTS.
- IF THE SUBGRADE PLASTICITY INDEX VALUE IS 20 OR LESS, SUBGRADE STABILIZATION IS NOT NEEDED. THE SUBGRADE SHOULD BE MOISTURE CONDITIONED (COMPACTED TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM DRY DENSITY AT A MINIMUM MOISTURE CONTENT OF OPTIMUM PLUS 2 PERCENT (TEXT114E)).
- THE SUBGRADE SHOULD BE TREATED USING **4.0 PERCENT** HYDRATED LIME (18.2 LB/SY) TO A DEPTH AS NOTED ABOVE.
- THE SUBGRADE SOILS SHOULD BE TESTED FOR SOIL SULFATE CONTENT PRIOR TO TREATMENT. IF THE SOIL SULFATE CONTENT IS HIGH, AN ALTERNATE PROCEDURE / RECOMMENDATION WILL BE NEEDED.
- APPROVED FILL MATERIAL SHOULD BE USED TO RAISE THE GRADE. THE FILL SHOULD BE FREE OF DELETERIOUS MATERIAL WITH A MINIMUM CBR VALUE OF **4.0**. LIME APPLICATION RATES SHOULD BE RE-EVALUATED AND TESTED FOR SULFATE CONTENT PRIOR TO USE OF THE FILL MATERIAL. THE MATERIAL SHOULD BE PLACED AS PER APPLICABLE CITY OR COUNTY GUIDELINES.
- THE SUBGRADE SHOULD BE PROOF ROLLED TO IDENTIFY SOFT AREAS BEFORE TREATMENT.

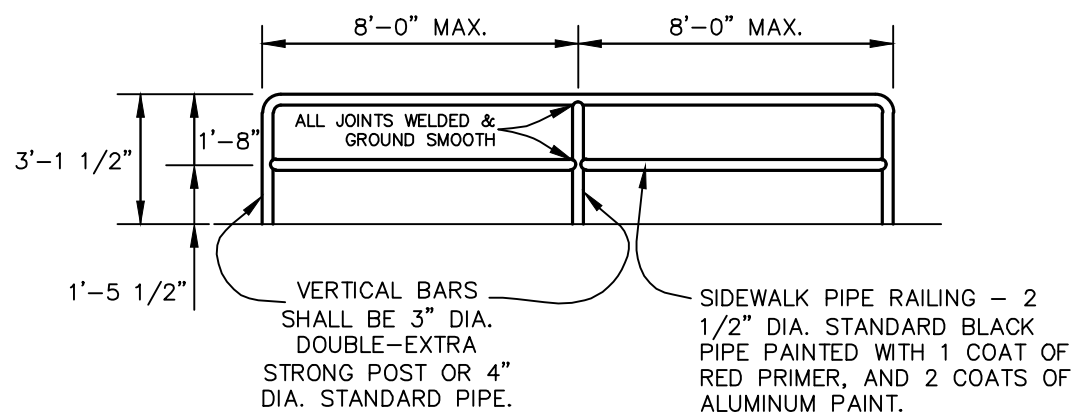
LIME NOTES:

- FOR LIME STABILIZATION CONSTRUCTION VERIFICATION THE FOLLOWING SHALL BE CONDUCTED ON THE FIELD:
- AFTER INITIAL MIXING THE SOIL-LIME MIXTURE SHALL MELLOW FOR A PERIOD OF TWO TO THREE (2-3) DAYS. MAINTAIN MOISTURE DURING MELLOWING.
 - AFTER MELLOWING AND FINAL MIXING, THE PULVERIZATION SHALL BE CHECKED USING THE FOLLOWING CRITERIA (REMOVE NON-SLAKING AGGREGATES RETAINED ON THE 3/8 INCH SIEVE FROM THE SAMPLE):
 - MINIMUM PASSING 1/2" SIEVE 100
 - MINIMUM PASSING 3/8" SIEVE 85
 - MINIMUM PASSING NO. 4 SIEVE 60
 - SAMPLE SOIL-LIME MIXTURE FOR DETERMINATION OF MAXIMUM DRY DENSITY (MDD). IN THE LABORATORY, MOLD SPECIMENS TO 95% OF MDD AT OPTIMUM MOISTURE CONTENT AND VERIFY UCS TO BE AT LEAST 160 PSI IN ACCORDANCE WITH PROCEDURE OUTLINED IN THE BEXAR COUNTY FLEXIBLE PAVEMENT DESIGN CRITERIA GUIDE FOR MIXTURE DESIGN.
 - COMPACT AND CHECK FIELD DENSITY (MINIMUM OF 95% OF MDD REQUIRED).
 - CURE FOR AN ADDITIONAL 2 TO 5 DAYS (TOTAL MELLOWING AND CURING TIME SHOULD TOTAL AT LEAST 5 DAYS).
 - VERIFY DEPTH OF LIME STABILIZED LAYER TO DEPTH AS NOTED ON PLAN TO WITHIN +/- 1.0 INCH.

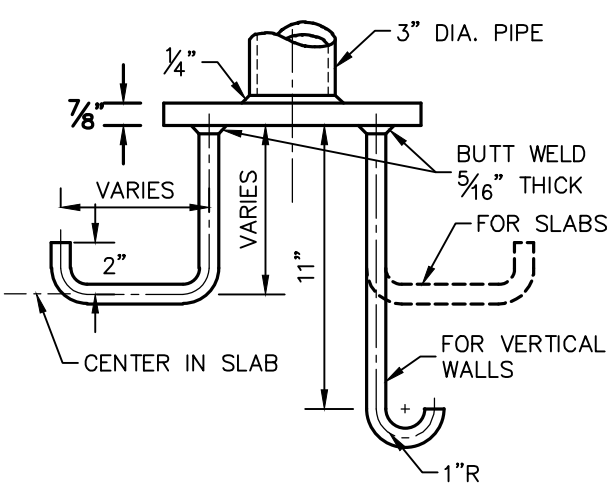


86' (SECONDARY ARTERIAL) ROW STREET SECTION
NOT-TO-SCALE

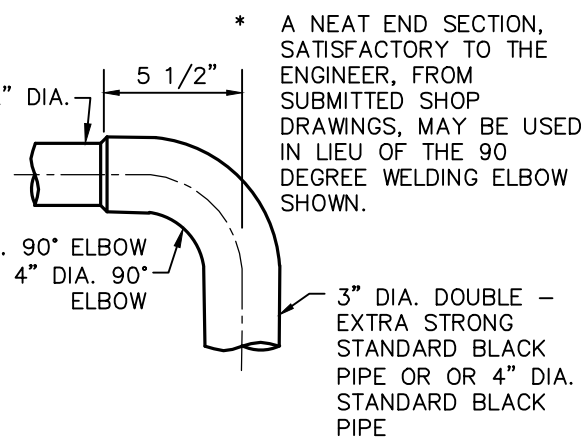
NOTE:
ALL CONSTRUCTION OF PIPE RAILING SHALL FOLLOW THE CITY OF SAN ANTONIO STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION. PIPE RAILING SHALL BE PAINTED TURKISH COFFEE 6076 FROM SHERWIN WILLIAMS.



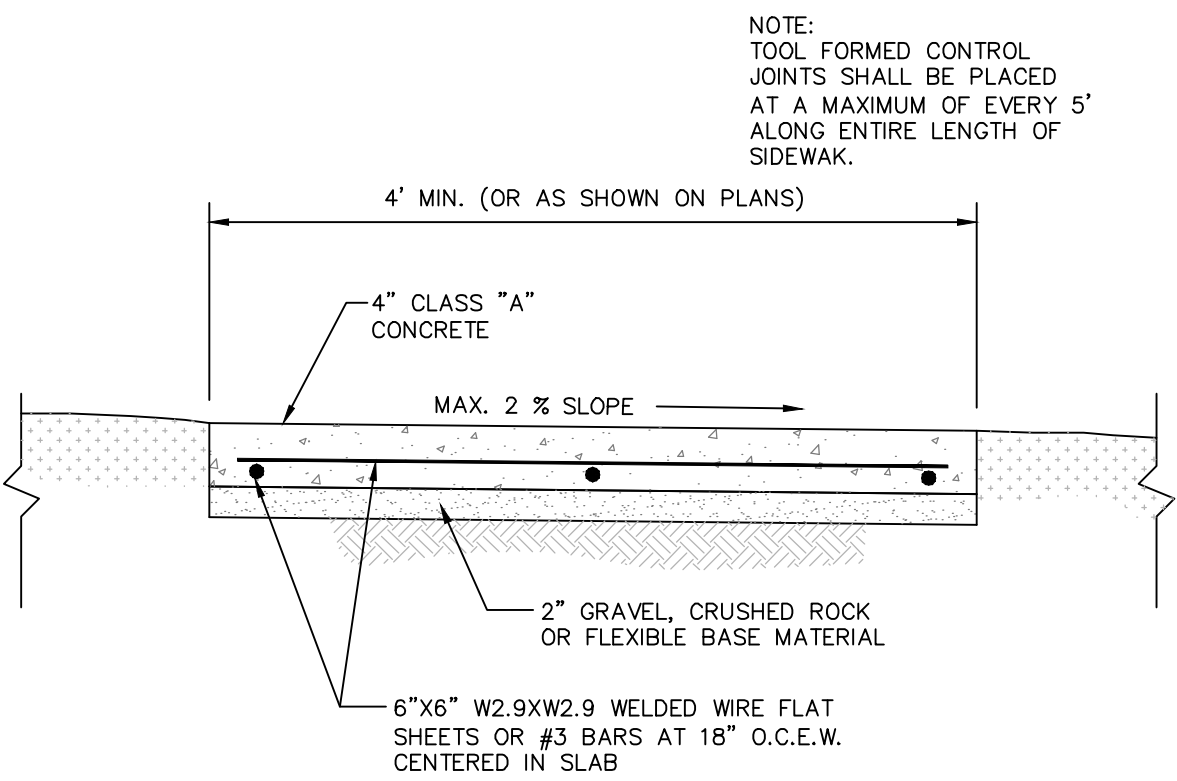
TYPICAL PIPE RAILING ELEVATION
NOT-TO-SCALE



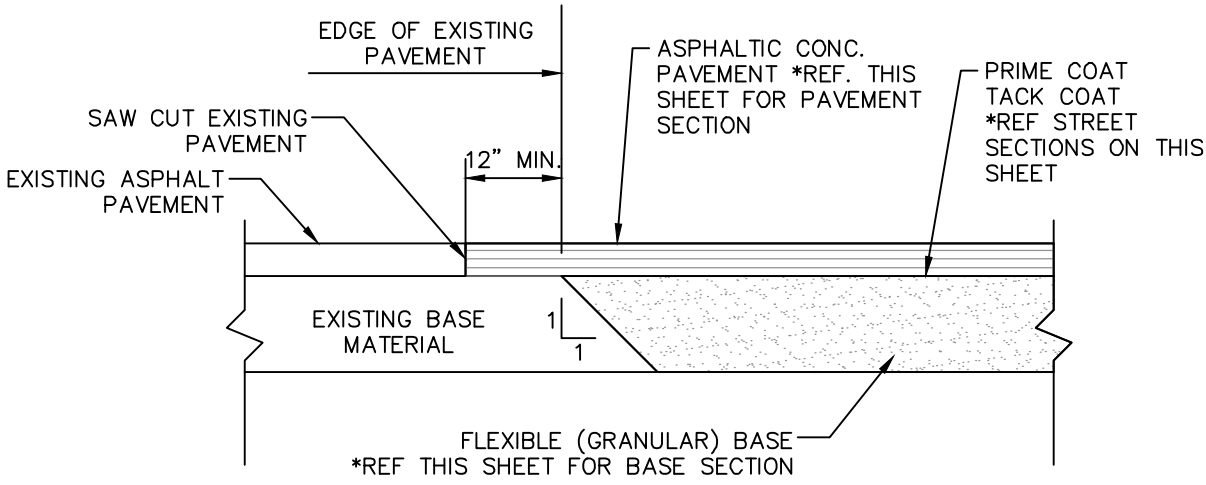
PIPE ANCHORAGE
DETAIL
NOT-TO-SCALE



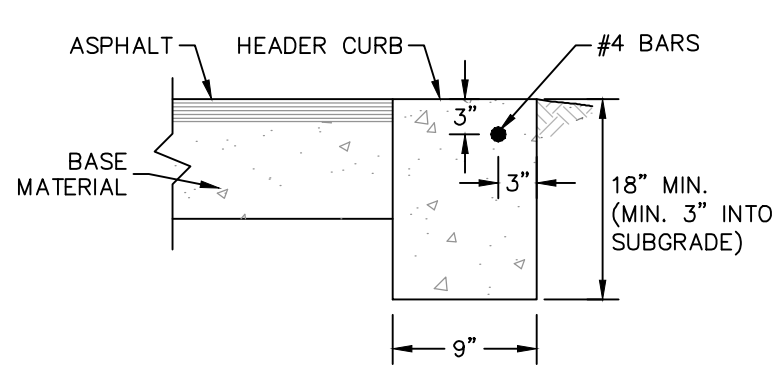
90° WELDING ELBOWS
DETAIL
NOT-TO-SCALE



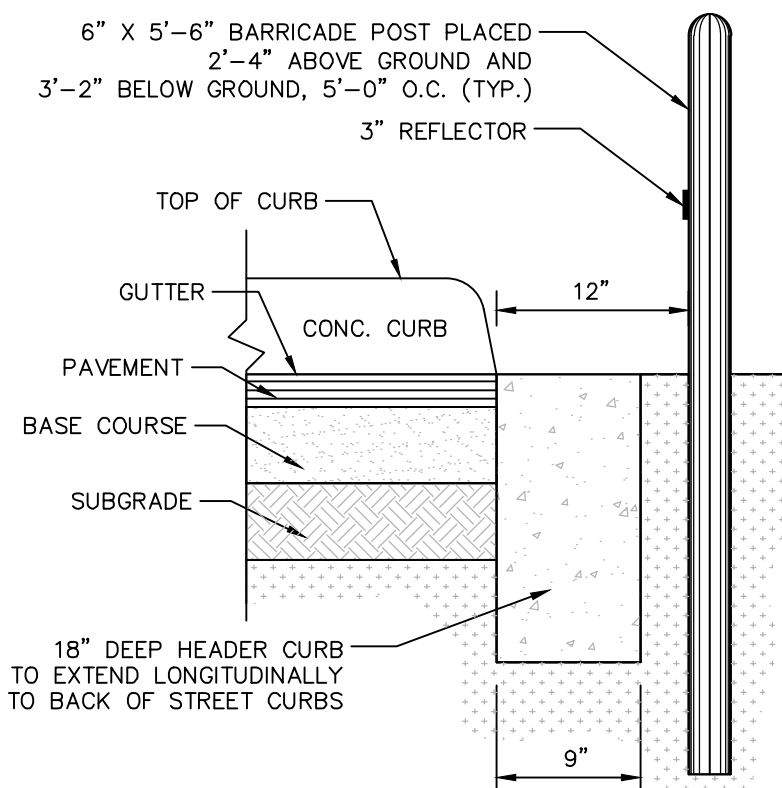
SIDEWALK DETAIL
NOT-TO-SCALE



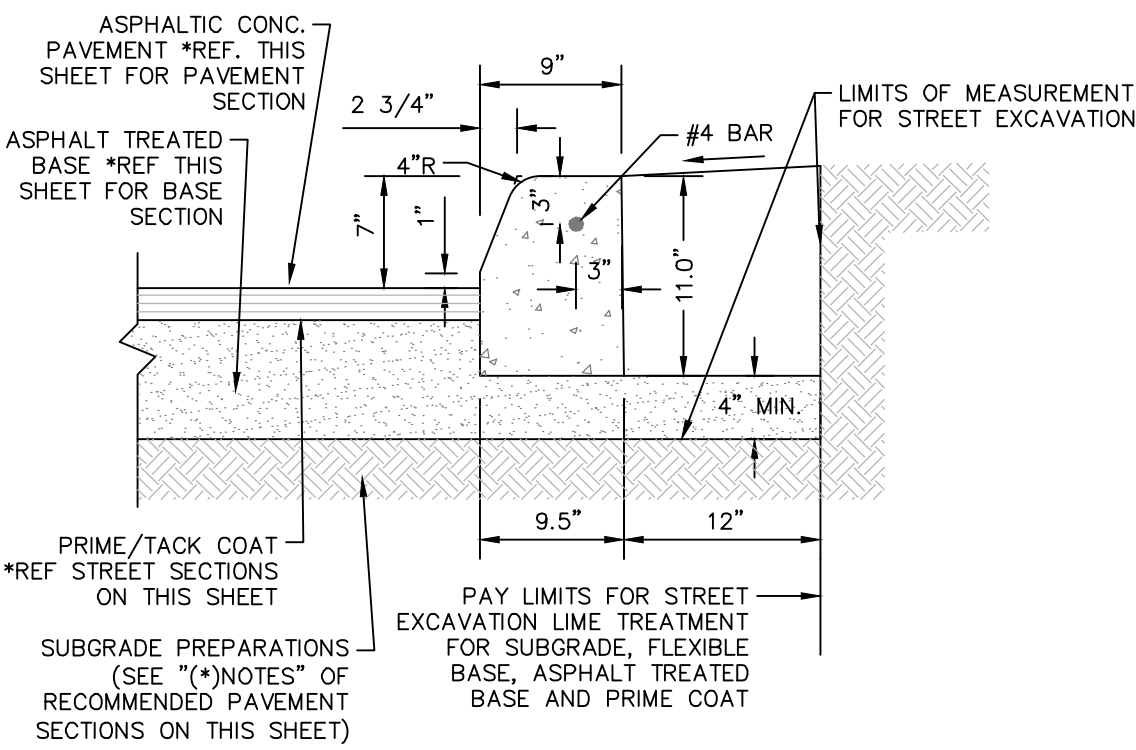
ASPHALT/ASPHALT JUNCTURE DETAIL
NOT-TO-SCALE



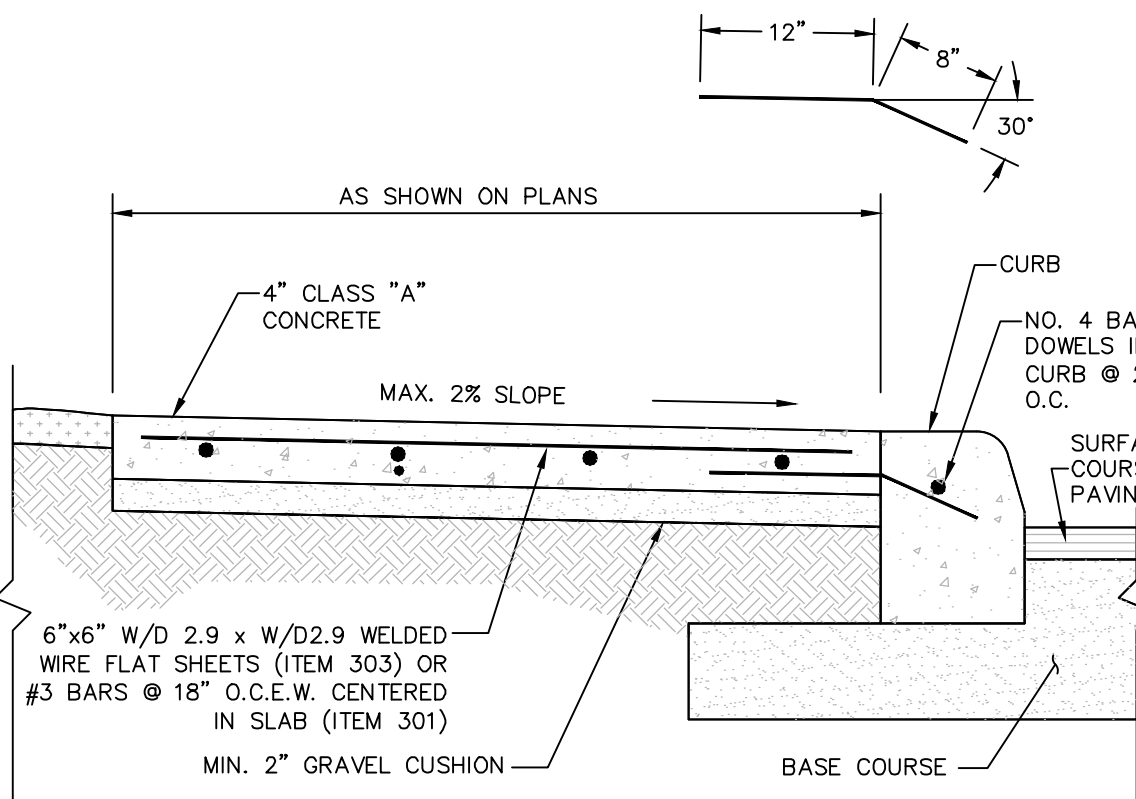
HEADER CURB DETAIL
NOT-TO-SCALE



HEADER CURB & BARRICADE POST DETAIL
NOT-TO-SCALE



7" STD. CONCRETE CURB DETAIL
NOT-TO-SCALE



SIDEWALK & CURB DETAIL
NOT-TO-SCALE

DATE	
NO.	
REVISION	



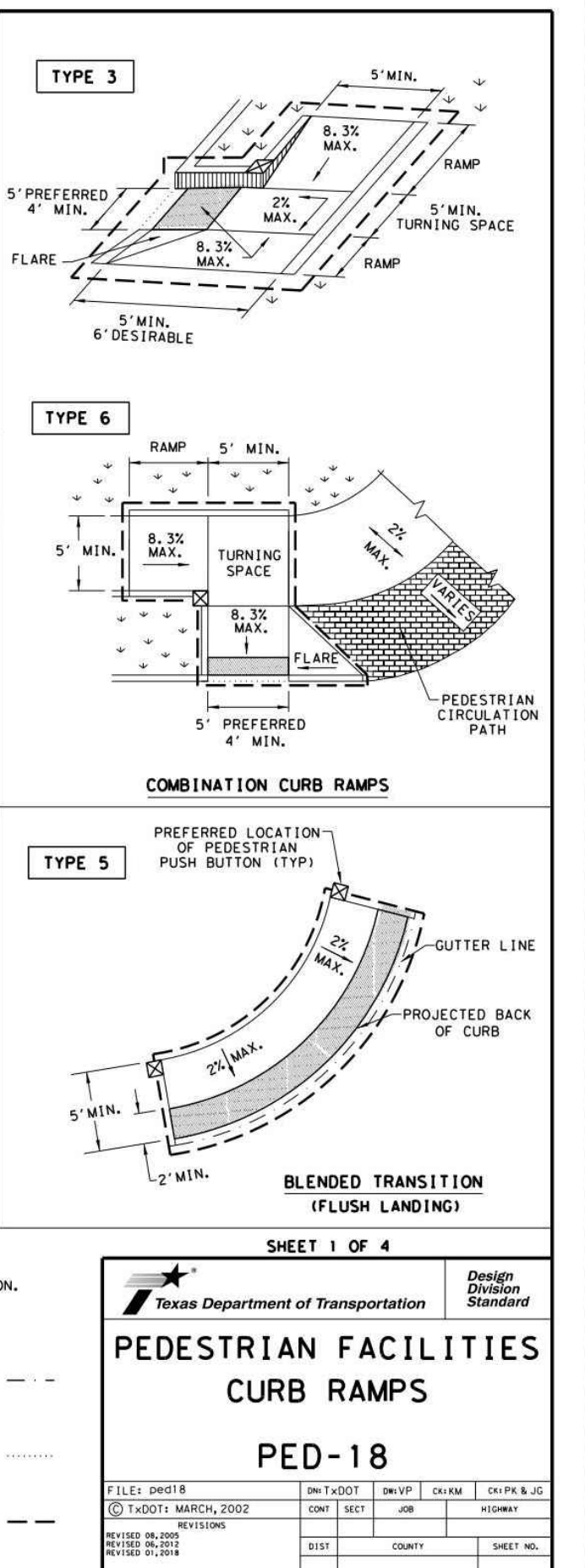
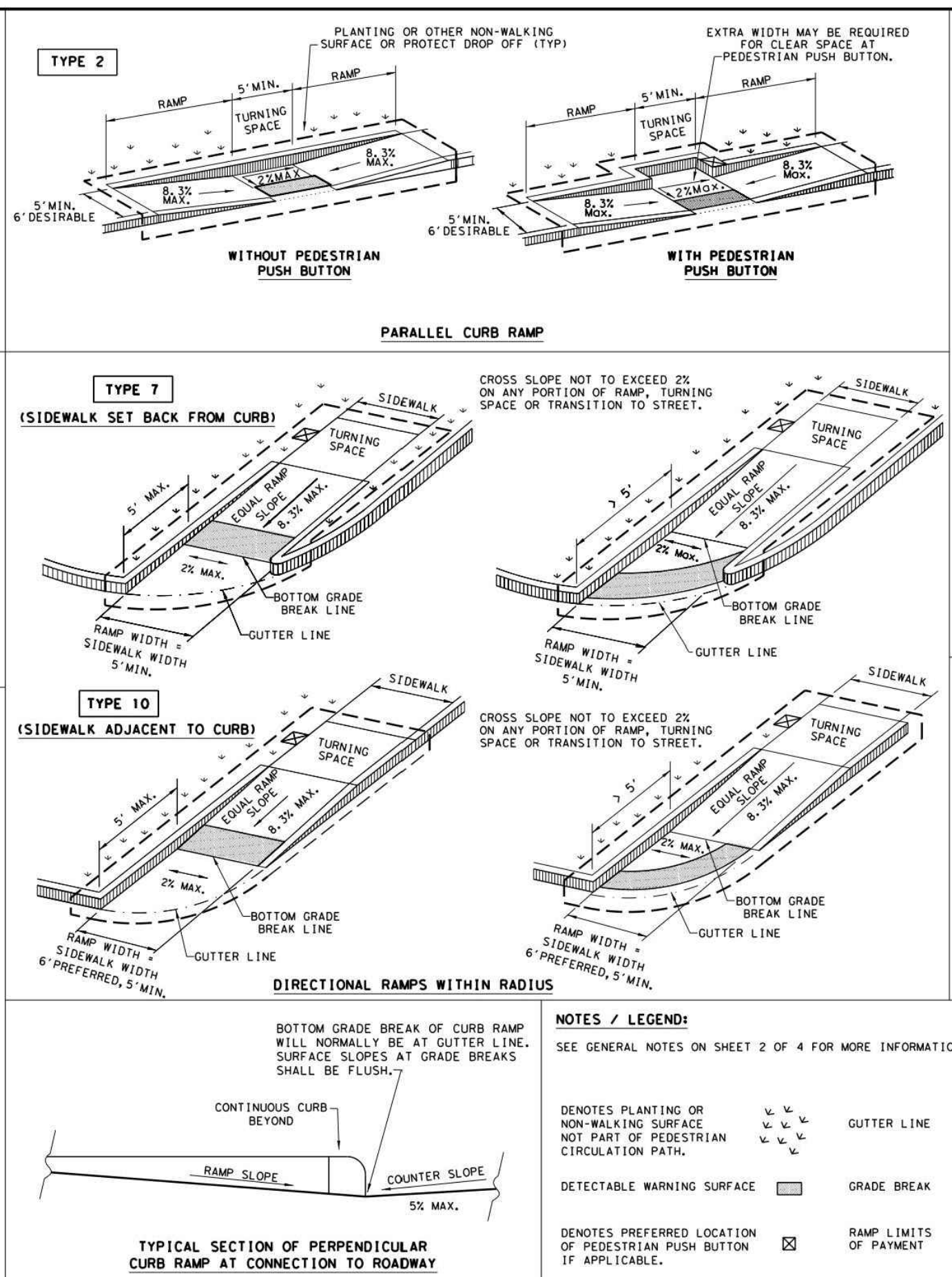
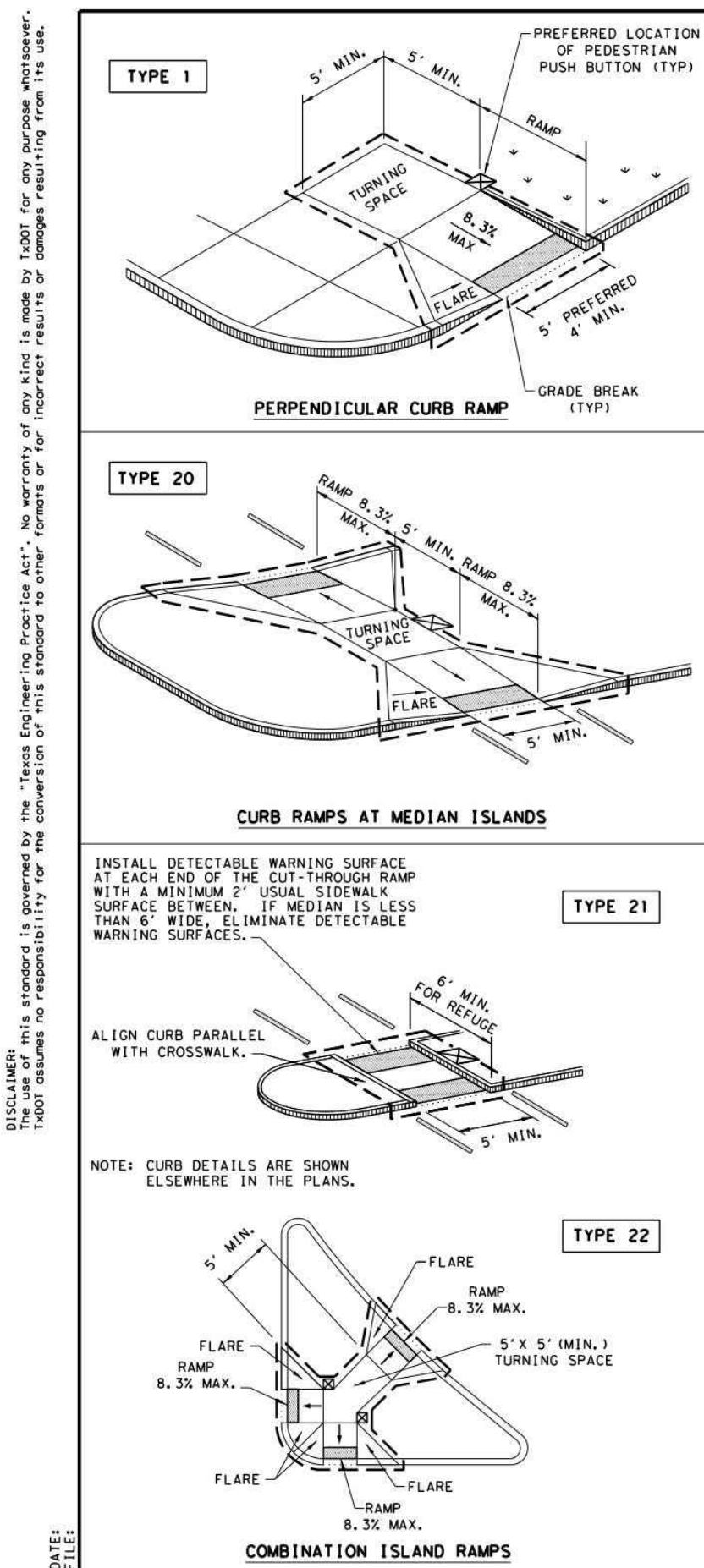
PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #170 | TEXAS SURVEYING FIRM #1002860

SAGE RUN, PHASE-2
SAN ANTONIO, TEXAS

STREET DETAILS

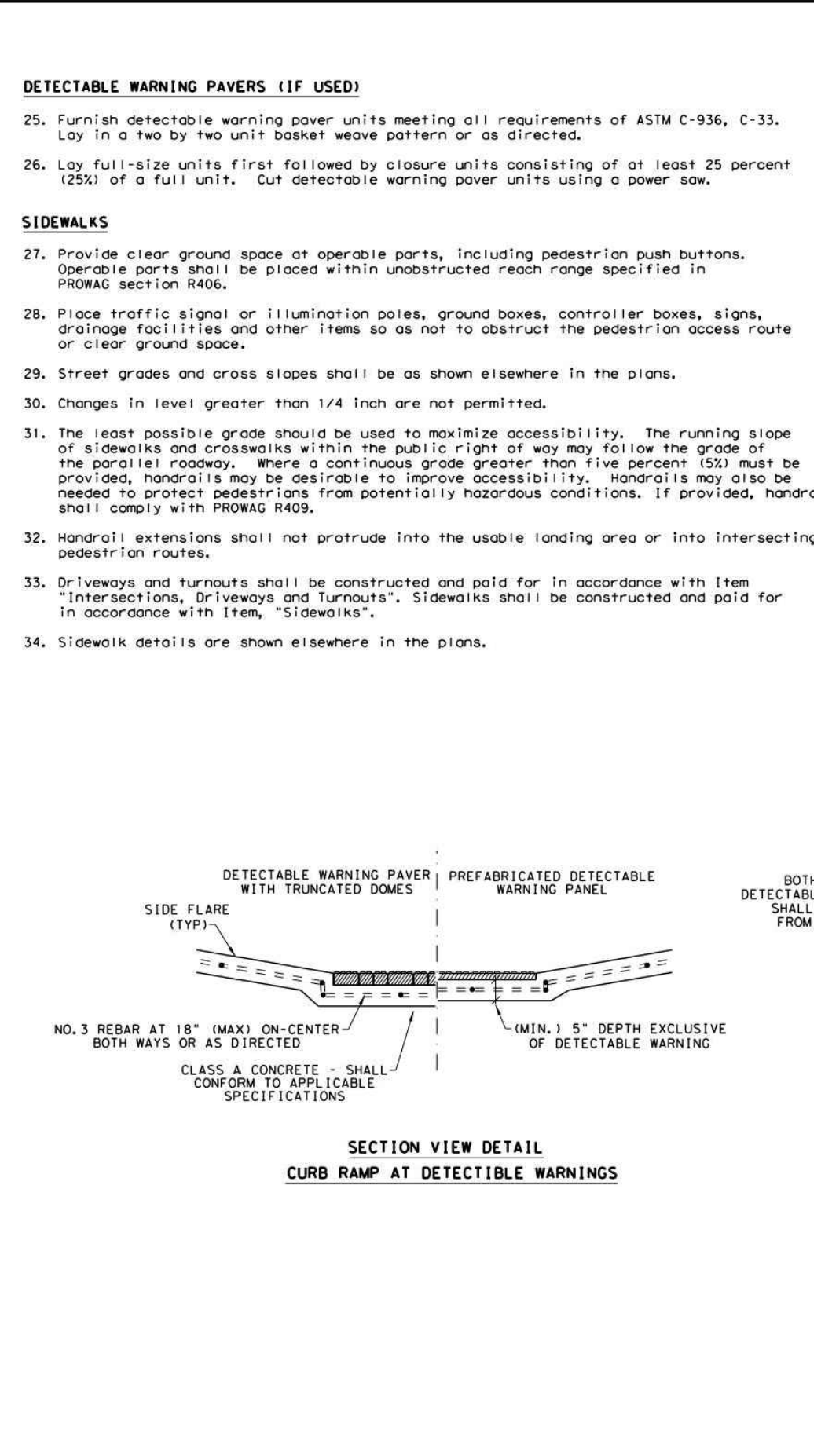
PLAT NO.	22-11800755
JOB NO.	12431-01
DATE	FEBRUARY 2024
DESIGNER	CB
CHECKED	JA
DRAWN	CB
SHEET	C2.10



TEXAS Department of Transportation
PEDESTRIAN FACILITIES
CURB RAMP
PED-18

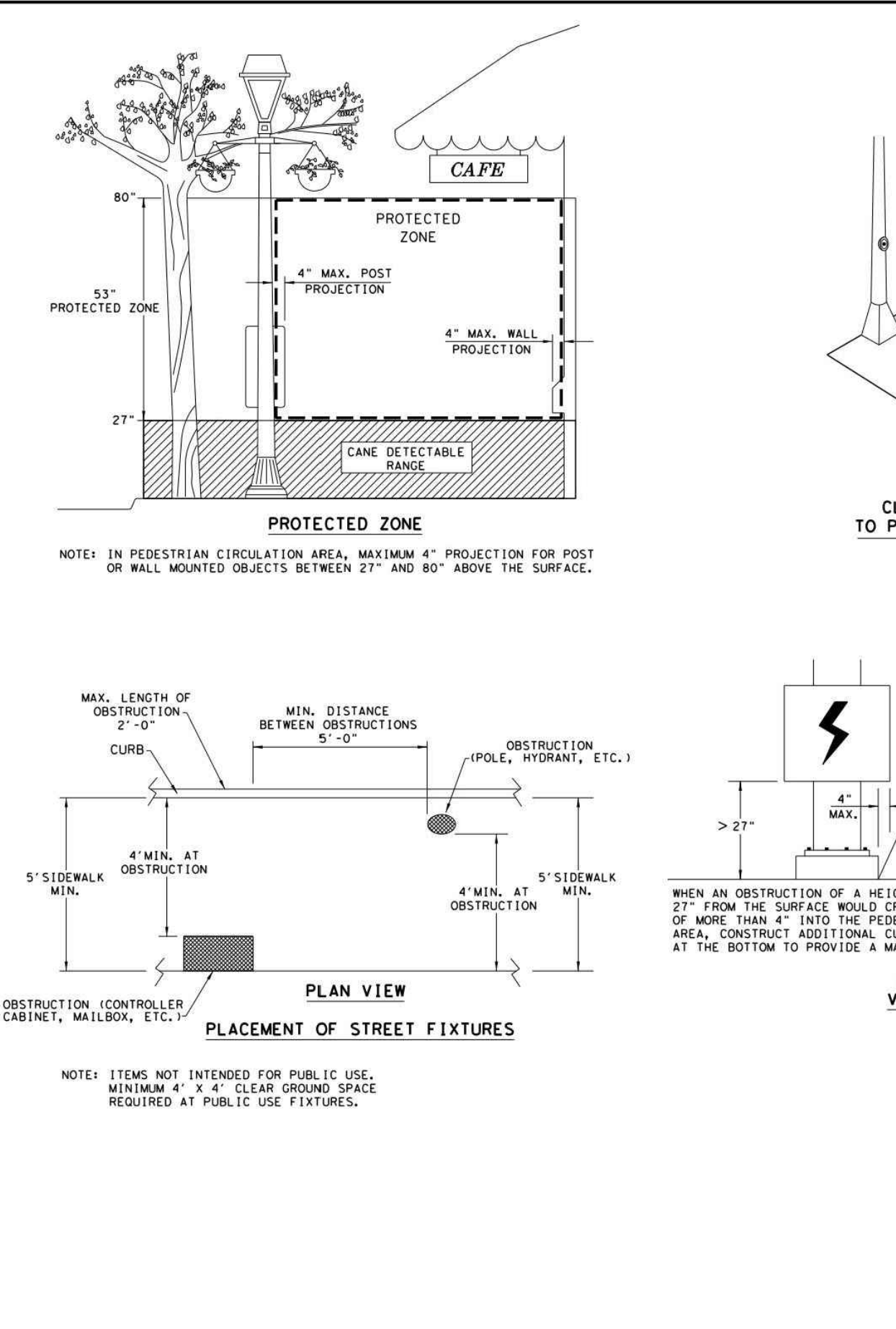
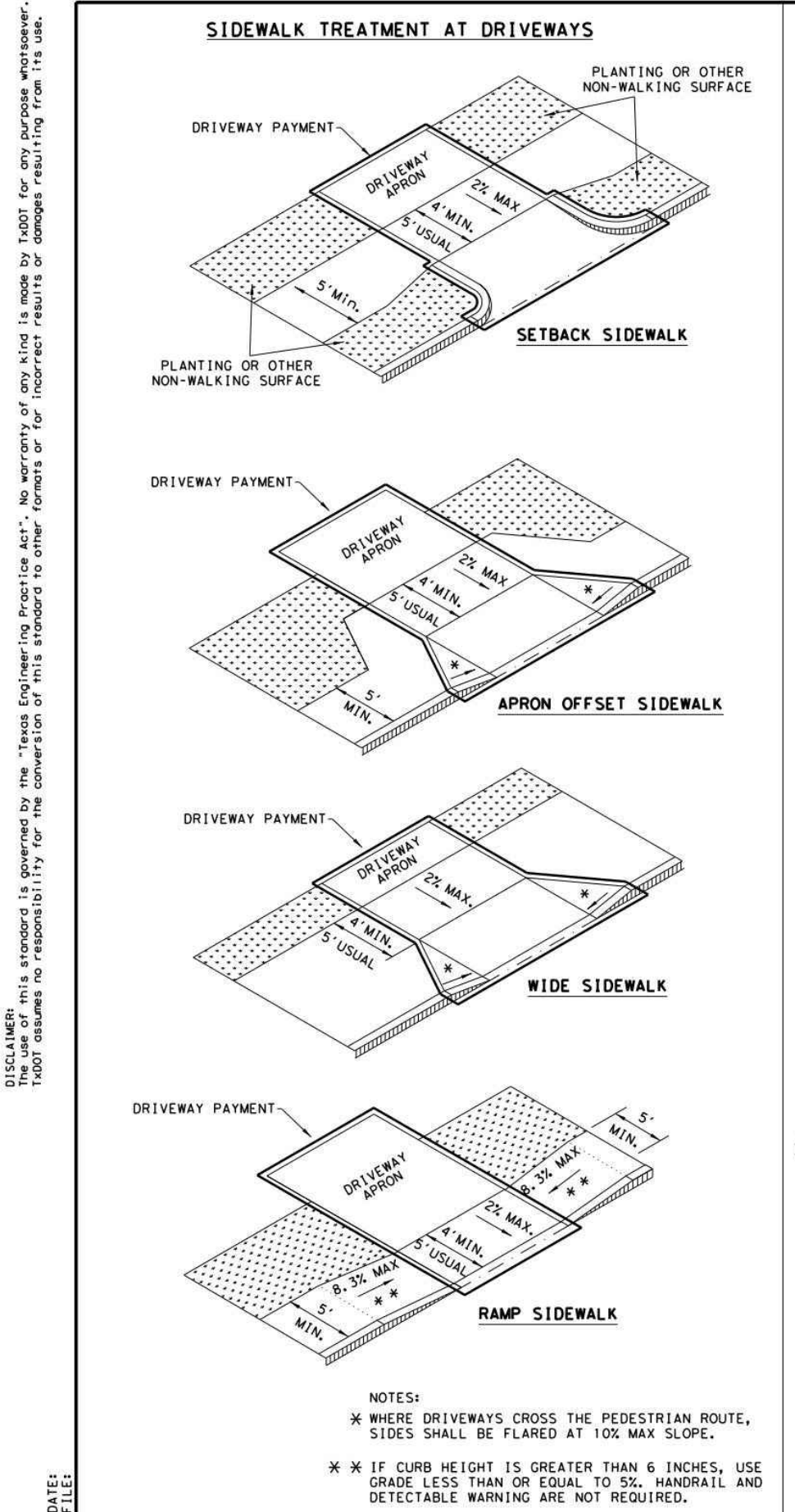
FILED: 08/18	DATE: 08/18	BY: JWB	CHECKED: JWB	DESIGNED: JWB	DRAWN: JWB	SHEET NO. 1
REVISIONS	DATE	BY	CHKD	DESIGNED	DRAWN	
01 TADDT, MARCH, 2002	03/01/02	JWB				
02 TADDT, MARCH, 2002	03/01/02	JWB				
03 TADDT, MARCH, 2002	03/01/02	JWB				

- GENERAL NOTES**
1. Install a curb ramp at each pedestrian street crossing.
 2. All slopes shown are maximum allowable. Cross slopes of 1.5% and lesser running should be used. Adjust curb ramp length or grade of approach sidewalks as directed.
 3. Maximum allowable cross slope on sidewalk and curb ramp surfaces is 2%.
 4. The minimum sidewalk width is 5'. Where the sidewalk is adjacent to the back of curb, a 5' sidewalk width is desirable. Where a 5' sidewalk cannot be provided due to site constraints, sidewalk width may be reduced to 4' for short distances.
 5. 5' x 5' posting areas or intervals not to exceed 200' are required.
 6. Turning spaces shall be 5' x 5' minimum. Cross slope shall be maximum 2%.
 7. Clear space at the bottom of curb ramps shall be a minimum of 4' x 4' wholly contained within the crosswalk and wholly outside the parallel vehicular travel path.
 8. Provide flared sides where the pedestrian circulation path crosses the curb ramp. Flared sides shall be sloped at 10% maximum, measured parallel to the curb. Returned curbs may be used only where pedestrians would not normally walk across the ramp, either because the adjacent surface is planted, substantially obstructed, or otherwise protected.
 9. Additional information on curb ramp location, design, light reflective value and texture may be found in the latest draft of the proposed guidelines for Pedestrian Facilities in the Public Right of Way (PRMAG) as published by the U.S. Architectural and Transportation Barriers Compliance Board (Access Board).
 10. To serve as a pedestrian refuge area, the median should be a minimum of 6' wide, measured from back of curbs. Medians should be designed to provide accessible passage over or through them.
 11. Small channelization islands, which do not provide a minimum 5' x 5' landing at the top of curb ramps, shall be cut through level with the surface of the street.
 12. Crosswalk dimensions, crosswalk markings and stop bar locations shall be as shown elsewhere in the plans. At intersections where crosswalk markings are not required, curb ramps shall align with theoretical crosswalks unless otherwise directed.
 13. Provide curb ramps to connect the pedestrian access route at each pedestrian street crossing. Handrails are not required on curb ramps.
 14. Curb ramps and landings shall be constructed and paid for in accordance with Item 531 "Sidewalks".
 15. Place concrete at a minimum depth of 5" for ramps, flares and landings, unless otherwise directed.
 16. Furnish and install No. 3 reinforcing steel bars at 18" o.c. both ways, unless otherwise directed.
 17. Provide a smooth transition where the curb ramps connect to the street.
 18. Curbs shown on sheet 1 within the limits of payment are considered part of the curb ramp for payment, whether 1" is concrete curb, gutter, or combined curb and gutter.
 19. Existing features that comply with applicable standards may remain in place unless otherwise shown on the plans.
- DETECTABLE WARNING MATERIAL**
19. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with PROWAG. The surface must contrast visually with adjoining surfaces, including side flares. Furnish and install an approved cast-in-place dark brown or dark red detectable warning surface material adjacent to unobstructed concrete, unless specified elsewhere in the plans.
 20. Detectable warning materials must meet TxDOT Departmental Materials Specification DMS 4550 and be listed on the Material Producer List. Install products in accordance with manufacturer's specifications.
 21. Detectable warning surfaces must be firm, stable and slip resistant.
 22. Detectable warning surfaces shall be a minimum of 24 inches in depth in the direction of pedestrian travel, and extend the full width of the curb ramp or landing where the pedestrian access route enters the street.
 23. Detectable warning surfaces shall be located so that the edge nearest the curb line is at the back of curb and neither end of that edge is greater than 5 feet from the back of curb. Detectable warning surfaces may be curved along the corner radius.
 24. Shaded areas on sheet 1 of 4 indicate the approximate location for the detectable warning surface for each curb ramp type.



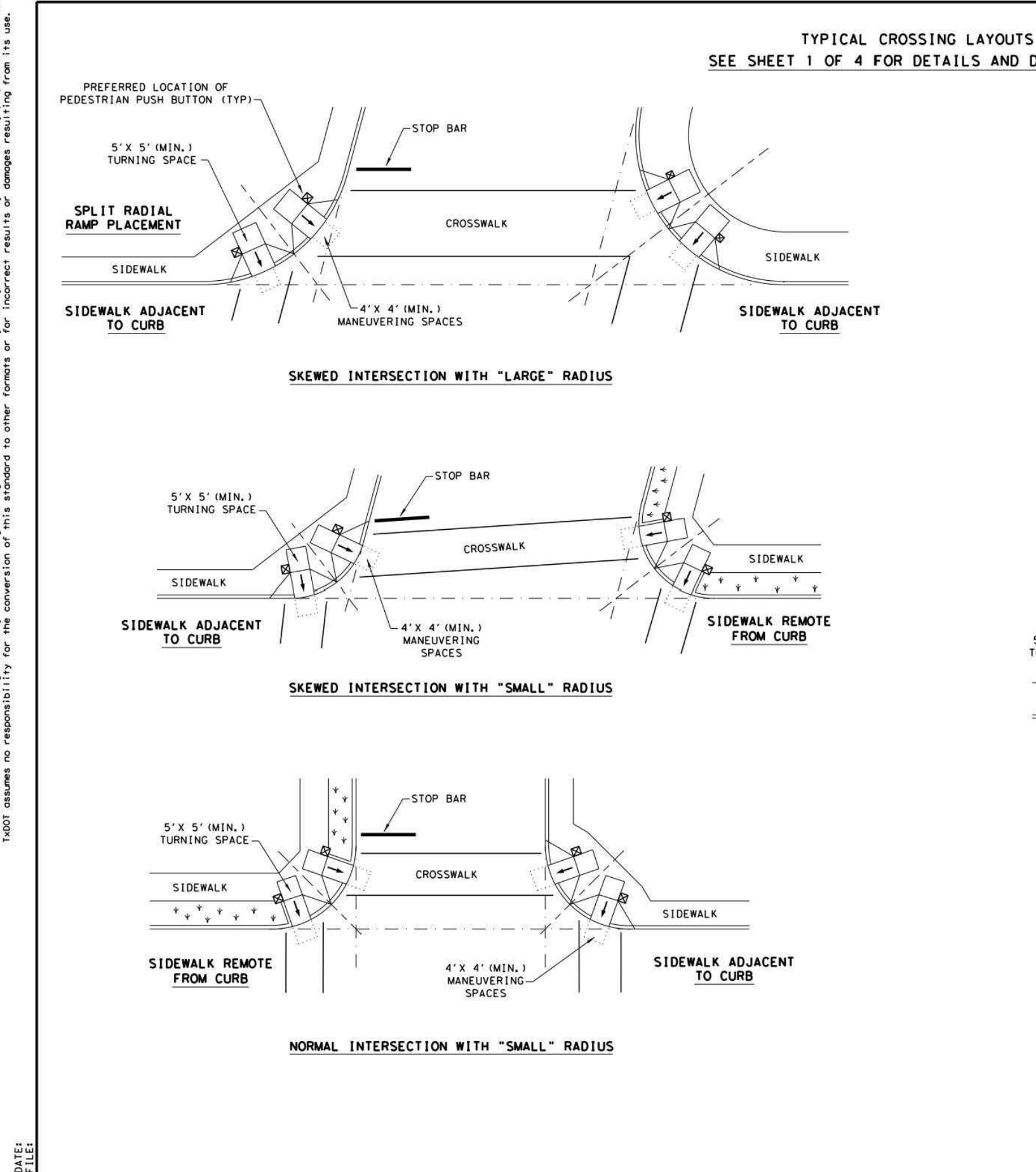
TEXAS Department of Transportation
PEDESTRIAN FACILITIES
CURB RAMP
PED-18

FILED: 08/18	DATE: 08/18	BY: JWB	CHECKED: JWB	DESIGNED: JWB	DRAWN: JWB	SHEET NO. 2
REVISIONS	DATE	BY	CHKD	DESIGNED	DRAWN	
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03 TADDT, MARCH, 2002	03/01/02	JWB				



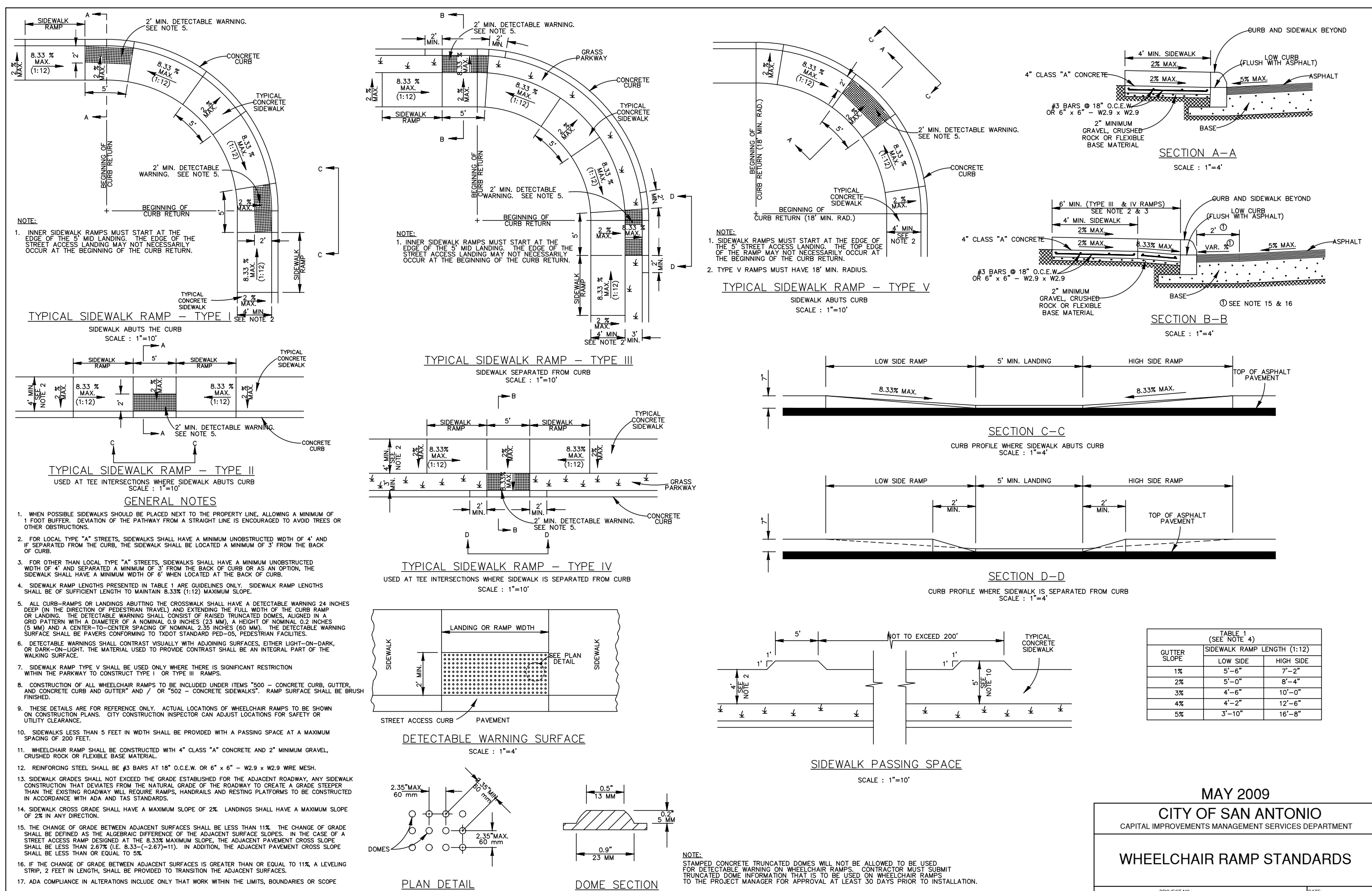
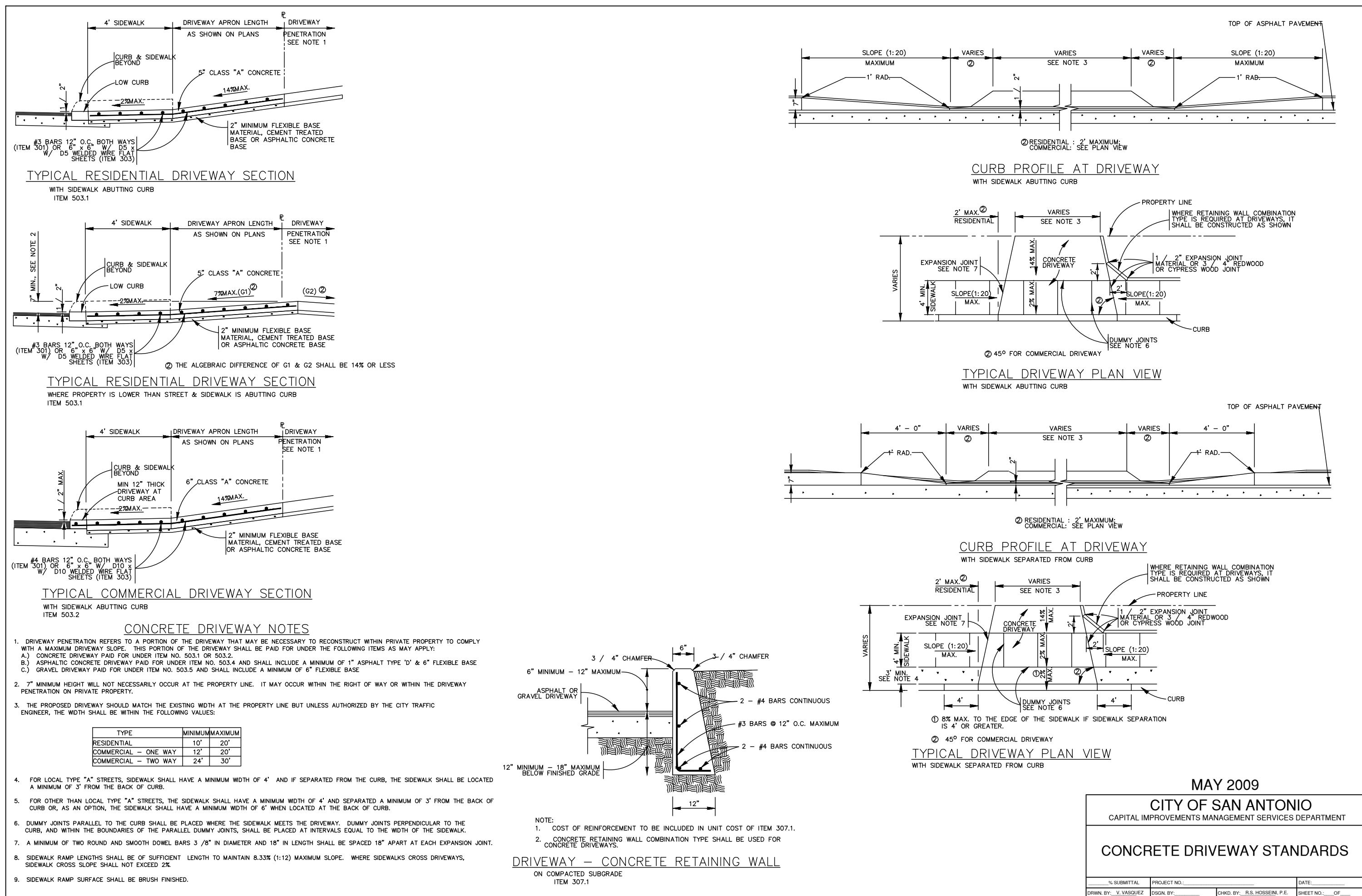
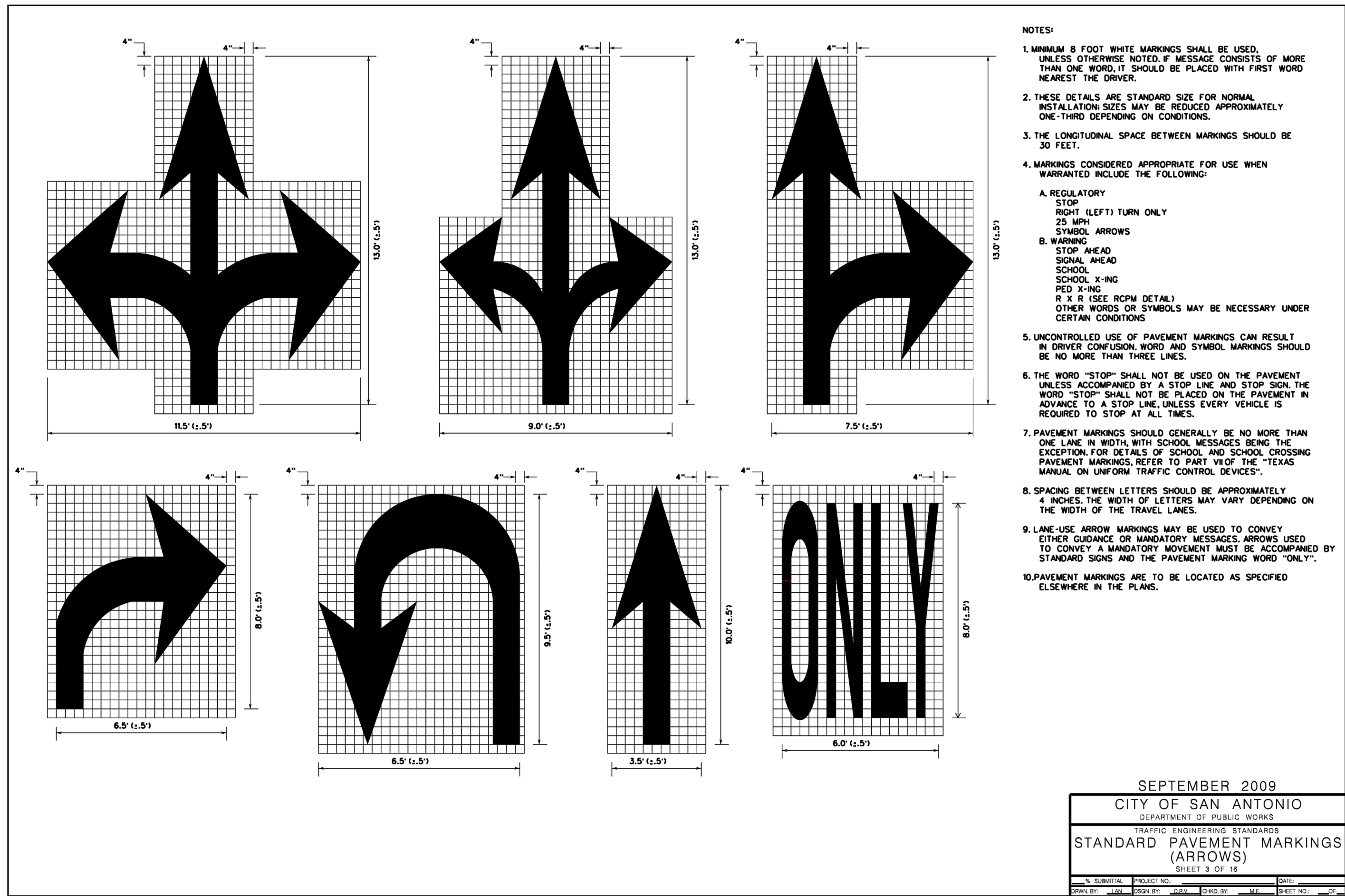
TEXAS Department of Transportation
PEDESTRIAN FACILITIES
CURB RAMP
PED-18

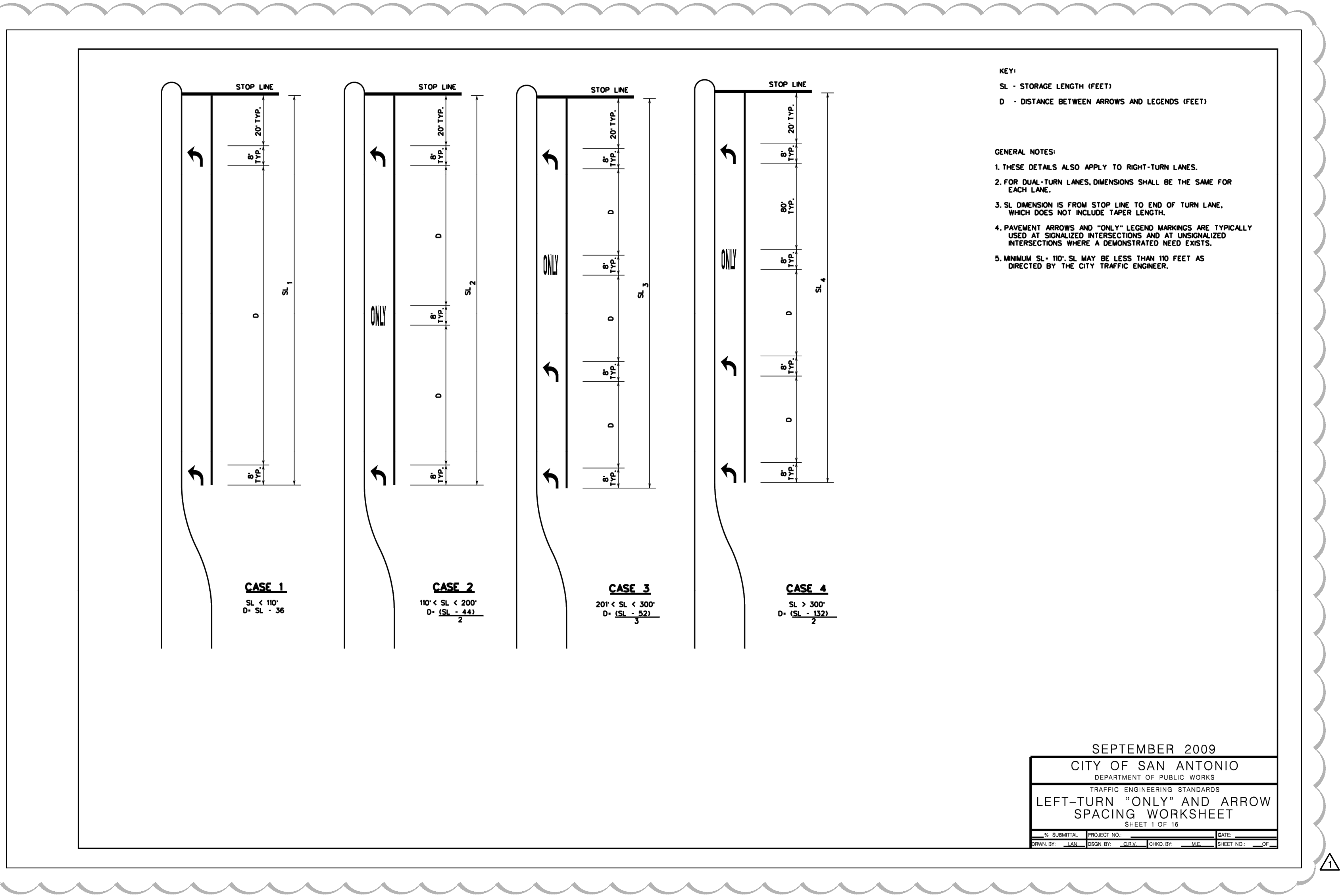
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02 TADDT, MARCH, 2002	03/01/02	JWB				
03 TADDT, MARCH, 2002	03/01/02	JWB				



TEXAS Department of Transportation
PEDESTRIAN FACILITIES
CURB RAMP
PED-18

FILED: 08/18	DATE: 08/18	BY: JWB	CHECKED: JWB	DESIGNED: JWB	DRAWN: JWB	SHEET NO. 4
REVISIONS	DATE	BY	CHKD	DESIGNED	DRAWN	
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02 TADDT, MARCH, 2002	03/01/02	JWB				
03 TADDT, MARCH, 2002	03/01/02	JWB				



[illegible]

**PAPE-DAWSON
ENGINEERS**

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

SAGE RUN, PHASE-2

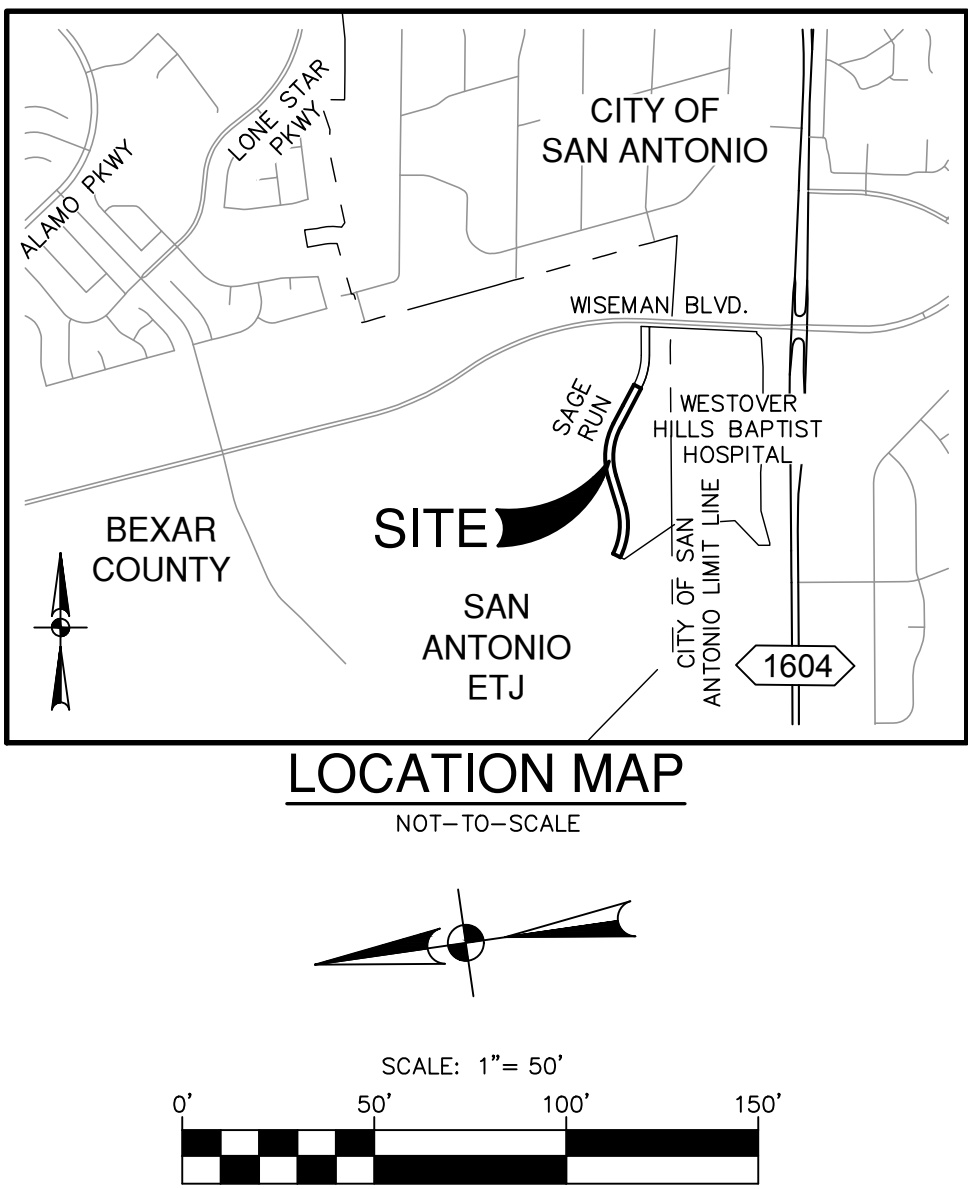
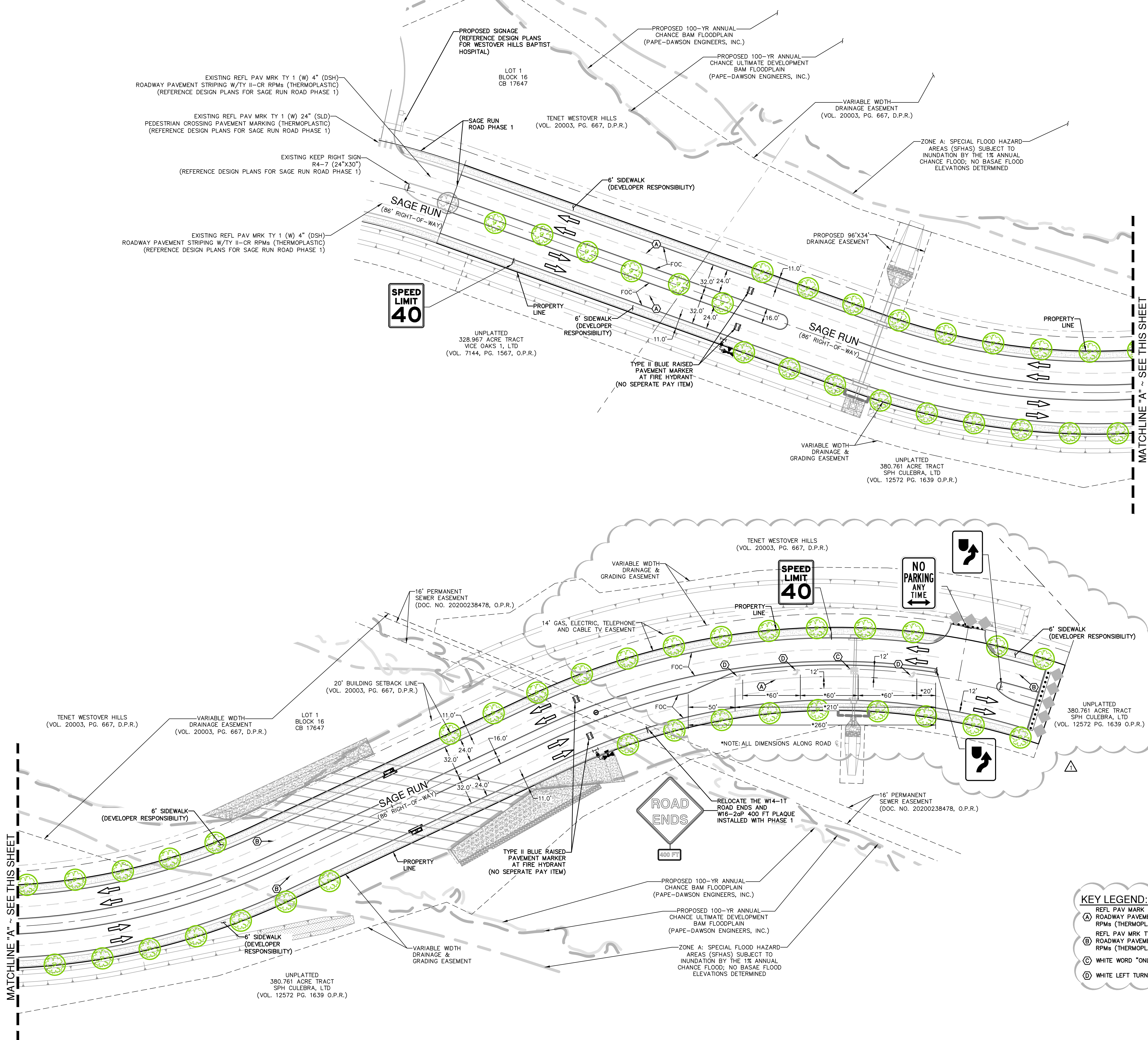
SAN ANTONIO, TEXAS

STREET DETAILS

PLAT NO. 22-11800755
JOB NO. 12431-01
DATE NOVEMBER 2024
DESIGNER JS
CHECKED VS DRAWN JS
SHEET C2.13

Date: Nov. 20, 2024, 11:51am, User: ID: jaramaz
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SYMBOL	UNIT BOUNDARY	ITEM NUMBER
	TRAFFIC FLOW ARROW	
	SIDEWALK (SITEWORK CONTRACTOR RESPONSIBILITY)	
	TYPE II BLUE RAISED PAVEMENT MARKERS - NO SEPERATE PAY ITEM (N.T.S.)	
	END OF ROAD MARKER OM4-3	
	HEADER CURB W/ BARRICADE POSTS	
	KEEP RIGHT SIGN R4-7 (24"X30")	531.17
	NO PARKING ANYTIME SIGN R7-1 (18"X24")	531.21
	SPEED LIMIT SIGN R2-1 (40-MPH) 24"X30"	
	ROAD ENDS W14-1T (30"X30")	
	DISTANCE PLAQUE W16-20P (400 FT) (24"X12")	

KEY LEGEND:
(A) REFL PAV MRK TY 1 (W) 8" (SLD)
(B) ROADWAY PAVEMENT STRIPING W/ TY II-CR RPMs (THERMOPLASTIC)
(C) REFL PAV MRK TY 1 (W) 6" (DSH)
(D) ROADWAY PAVEMENT STRIPING W/ TY II-CR RPMs (THERMOPLASTIC)
(E) WHITE WORD "ONLY" (THERMOPLASTIC)
(F) WHITE LEFT TURN ARROW (THERMOPLASTIC)

BEXAR COUNTY ROW NOTES:
A BEXAR COUNTY PERMIT MUST BE OBTAINED BEFORE WORKING IN BEXAR COUNTY ROW. CONTRACTOR SHALL COORDINATE A TRAFFIC CONTROL PLAN FOR ALL WORK WITHIN THE ROW. ADDITIONAL WARNING SIGNS MAY BE RECOMMENDED BY THE ENGINEER ONCE THE ROADWAYS ARE CONSTRUCTED.

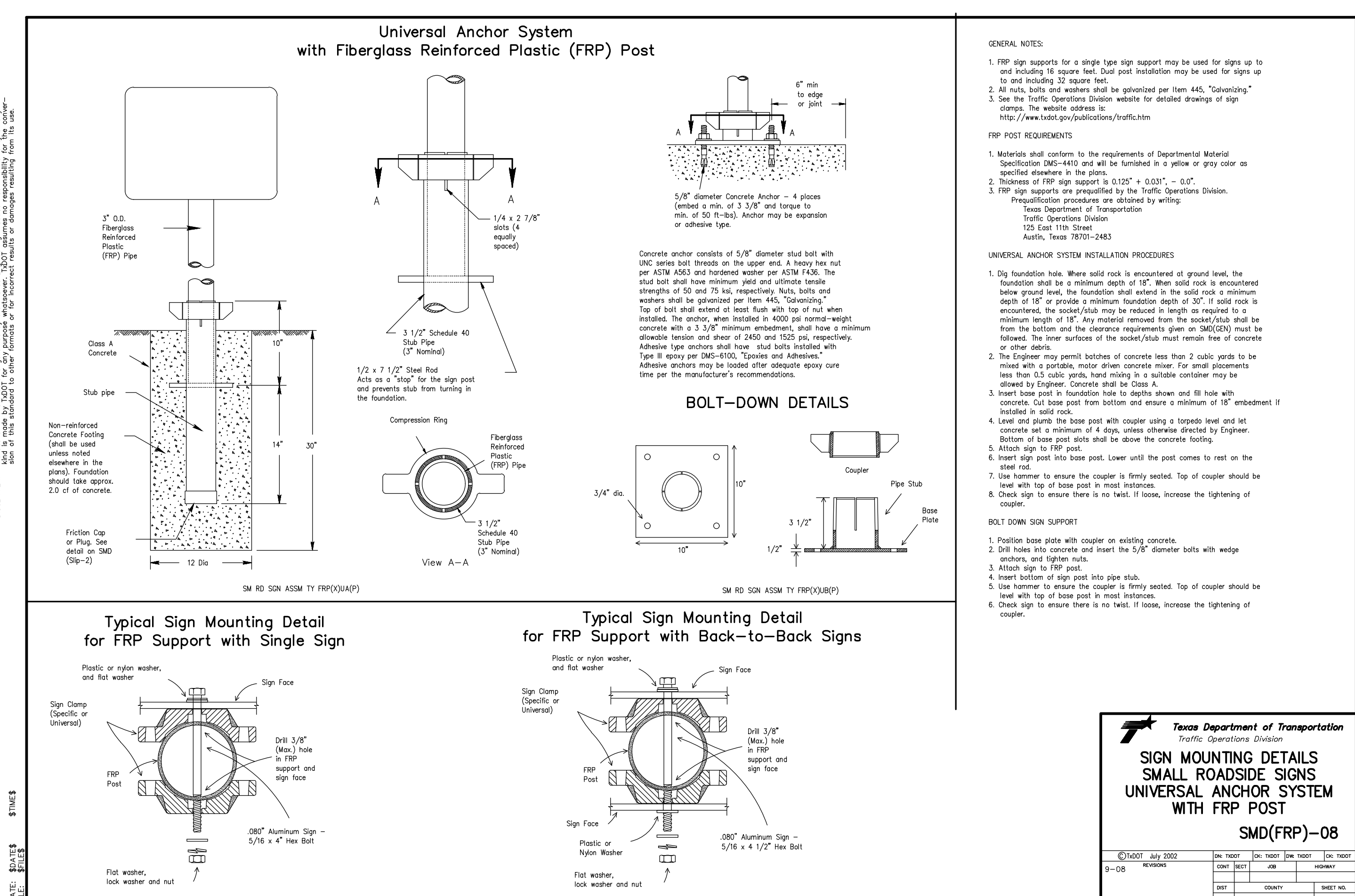
TRENCH EXCAVATION SAFETY PROTECTION:
CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND /OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

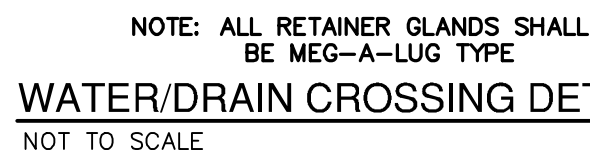
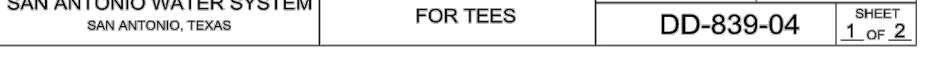
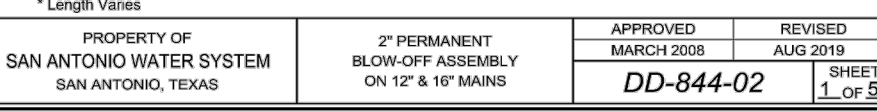
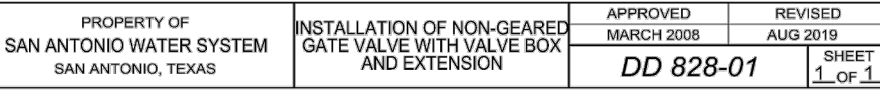
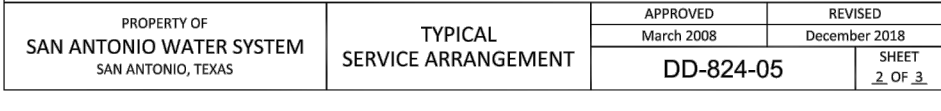
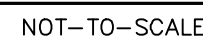
SAGE RUN, PHASE-2
SAN ANTONIO, TEXAS
OVERALL SIGNAGE PLAN

NO.	REVISION	DATE
1	TURN LANE AND CULVERT	11/20/2024

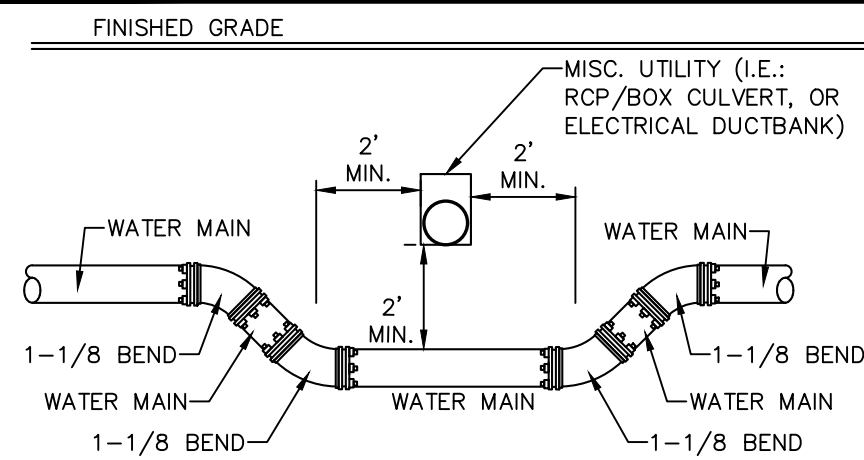
STATE OF TEXAS
DAVID E. MARTINEZ
94900
LICENSED PROFESSIONAL ENGINEER
11/20/24

PLAT NO.	22-11800755
JOB NO.	12431-01
DATE	NOVEMBER 2024
DESIGNER	CB
CHECKED	VS
DRAWN	CB
SHEET	C3.00



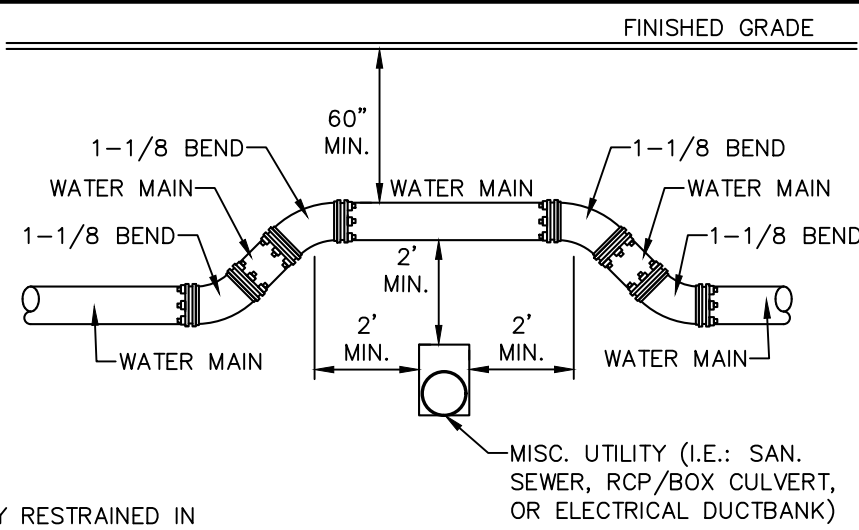


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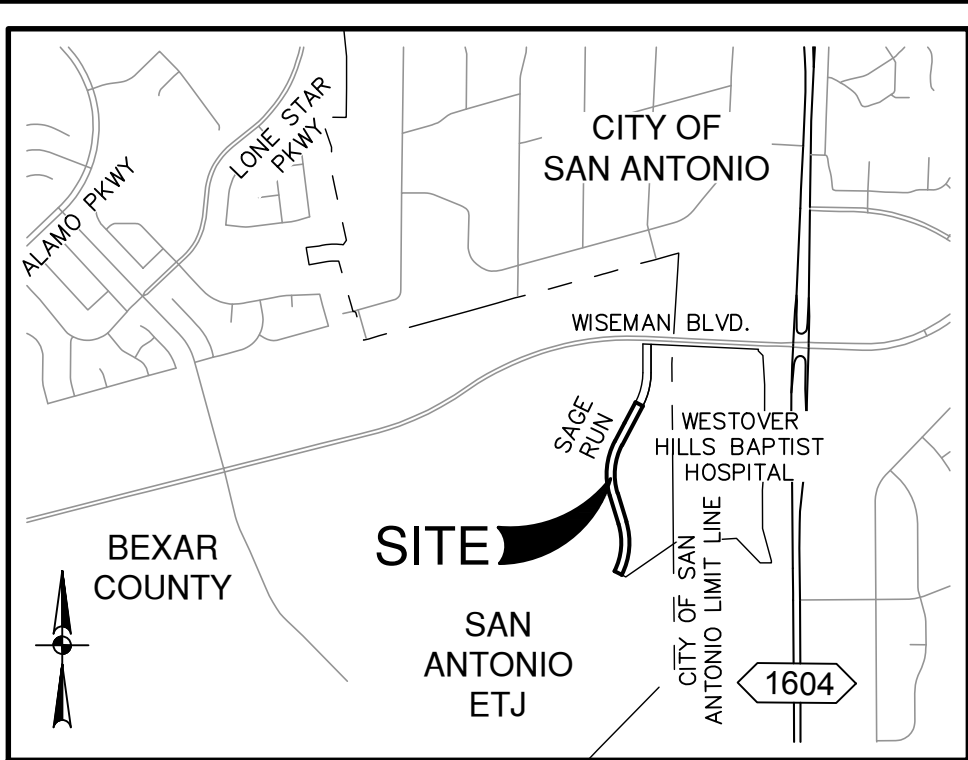
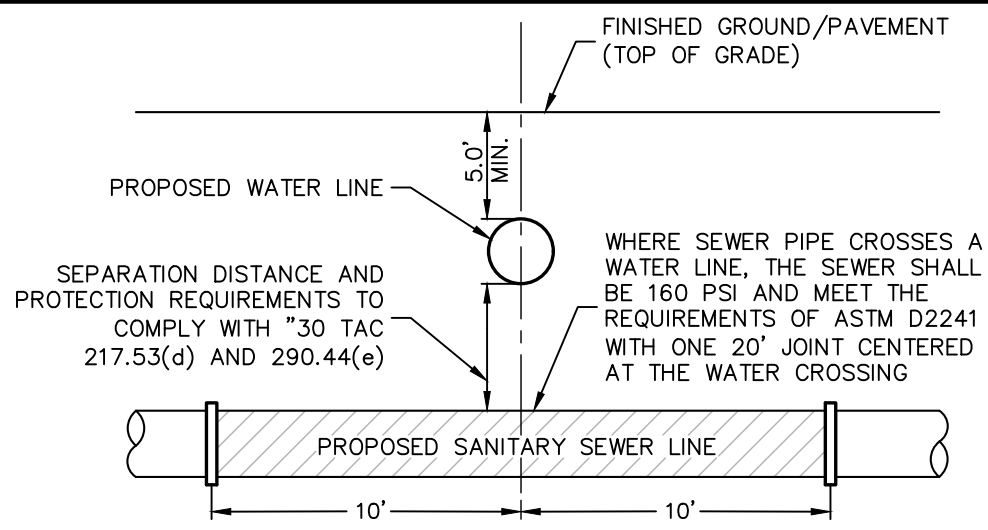
TYPICAL UTILITY/WATER
CROSSING DETAIL

NOT-TO-SCALE



TYPICAL SANITARY
SEWER/WATER CROSSING DETAIL

NOT-TO-SCALE



LOCATION MAP

NOT-TO-SCALE

SCALE: 1" = 50'



WATER LEGEND

PROJECT LIMITS	---
EXISTING WATER	---
EXISTING SEWER	---
PROPOSED SEWER	---
PROPOSED WATER	---
PROPOSED 3/4" SINGLE SERVICE WITH 5/8" METER	---
SINGLE 3/4" IRRIGATION SERVICE WITH 5/8" METER	---
JOINT RESTRAINT	---
PRV (PRESSURE REDUCING VALVE)	---

PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #10028800

SAGE RUN, PHASE-2
SAN ANTONIO, TEXAS
OVERALL UTILITY PLAN

NOTE

SEE SHEET C0.10 FOR ADDITIONAL GENERAL NOTES.

CAUTION!!!

CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITING TO: WATER, SEWER, TELEPHONE AND FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCTBANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT CONTRACTOR'S SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.

TRENCH EXCAVATION SAFETY PROTECTION

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR STRUCTURAL DESIGN/ GEOTECHNICAL/ SAFETY/EQUIPMENT CONSULTANT, IF ANY, SHALL REVIEW THESE PLANS AND ANY AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITES WITHIN THE PROJECT WORK AREA IN ORDER TO IMPLEMENT CONTRACTOR'S TRENCH EXCAVATION SAFETY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH AS A MINIMUM, OSHA STANDARDS FOR TRENCH EXCAVATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

WATER (SAWS PRESSURE ZONE 8)

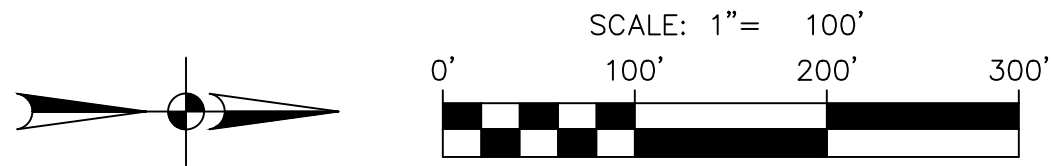
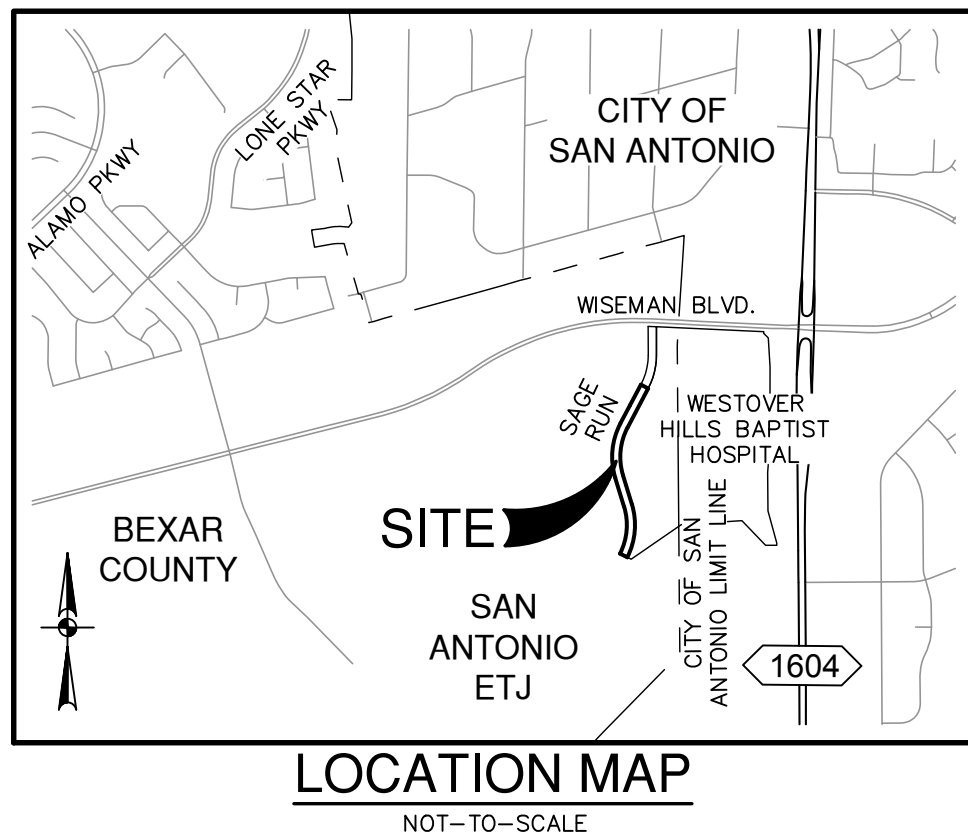
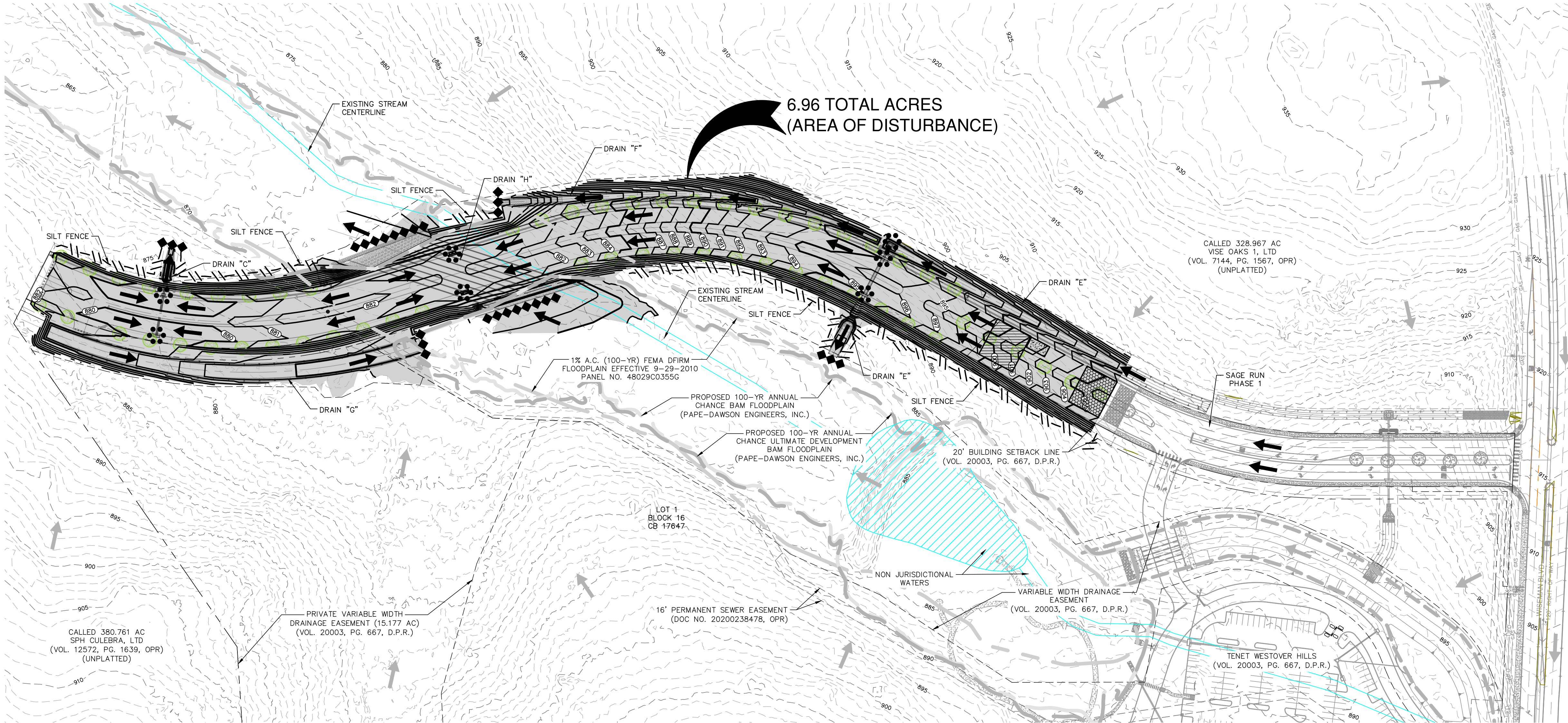
DEVELOPER'S NAME:	TENET HEALTHCARE
ADDRESS:	14201 DALLAS PARKWAY
CITY:	DALLAS
STATE:	TEXAS
ZIP:	75254
PHONE#	615-418-3578
FAX#	N/A
SAWS BLOCK MAP#	088618
TOTAL EDU'S	0
TOTAL ACREAGE	3.67
TOTAL LINEAR FOOTAGE OF PIPE:	12" 1,867 LF. PLAT #022-11800755
NUMBER OF LOTS	---
SAWS JOB NO.	23-1163

PLAT NO.	22-11800755
JOB NO.	12431-01
DATE	NOVEMBER 2024
DESIGNER	CB
CHECKED	VS
DRAWN	CB
SHEET	C6.00

Date: Nov. 20, 2024, 11:22am User: jgarchoz
File: P:\12431\01\DESIGN\SAGE RUN\SWP3-Phase-2\SWP3-1243101_SRP42.dwg

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SWP3 MODIFICATIONS		
DATE	SIGNATURE	DESCRIPTION



SWPPP LEGEND

PROJECT LIMITS	---
EXISTING CONTOUR	---
PROPOSED CONTOUR	---
FLOW ARROW (EXISTING)	→
FLOW ARROW (PROPOSED)	→
SILT FENCE	
ROCK BERM	
GRAVEL FILTER BAGS	
GRATE INLET PROTECTION	
SEDIMENT CONTROL ROLLS	
LIMITS OF DISTURBED AREA	---
STABILIZED CONSTRUCTION ENTRANCE/EXIT (FIELD LOCATE)	
CONSTRUCTION EQUIPMENT, VEHICLE & MATERIALS STORAGE AREA (FIELD LOCATE)	
CONCRETE TRUCK WASH-OUT PIT (FIELD LOCATE)	
NON JURISDICTIONAL WATERS	

GENERAL NOTES

- DO NOT DISTURB VEGETATED AREAS (TREES, GRASS, WEEDS, BRUSH, ETC.) ANY MORE THAN NECESSARY FOR CONSTRUCTION.
- CONSTRUCTION ENTRANCE/EXIT LOCATION, CONCRETE WASH-OUT PIT, AND CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE YARD TO BE DETERMINED IN THE FIELD.
- STORM WATER POLLUTION PREVENTION CONTROLS MAY NEED TO BE MODIFIED IN THE FIELD TO ACCOMPLISH THE DESIRED EFFECT. ALL MODIFICATIONS ARE TO BE NOTED ON THIS EXHIBIT AND SIGNED AND DATED BY THE RESPONSIBLE PARTY.
- RESTRICT ENTRY/EXIT TO THE PROJECT SITE TO DESIGNATED LOCATIONS BY USE OF ADEQUATE FENCING, IF NECESSARY.
- ALL STORM WATER POLLUTION PREVENTION CONTROLS ARE TO BE MAINTAINED AND IN WORKING CONDITIONS AT ALL TIMES.
- FOR A COMPLETE LISTING OF TEMPORARY STORM WATER POLLUTION PREVENTION PLAN.
- STORM WATER POLLUTION PREVENTION STRUCTURES SHOULD BE CONSTRUCTED WITHIN THE SITE BOUNDARIES. SOME OF THESE FEATURES MAY BE SHOWN OUTSIDE THE SITE BOUNDARIES ON THIS PLAN FOR VISUAL CLARITY.
- AS SOON AS PRACTICAL, ALL DISTURBED SOIL THAT WILL NOT BE COVERED BY IMPERVIOUS COVER SUCH AS PARKWAY AREAS, EASEMENT AREAS, EMBANKMENT SLOPES, ETC. WILL BE STABILIZED PER APPLICABLE PROJECT SPECIFICATIONS.
- BEST MANAGEMENT PRACTICES MAY BE INSTALLED IN STAGES TO COINCIDE WITH THE DISTURBANCE OF UPGRADE AREAS.
- BEST MANAGEMENT PRACTICES MAY BE REMOVED IN STAGES ONCE THE WATERSHED FOR THAT PORTION CONTROLLED BY THE BEST MANAGEMENT PRACTICES HAS BEEN STABILIZED IN ACCORDANCE WITH TPDES REQUIREMENTS.
- UPON COMPLETION OF THE PROJECT, INCLUDING SITE STABILIZATION, AND BEFORE FINAL PAYMENT IS ISSUED, CONTRACTOR SHALL REMOVE ALL SEDIMENT AND EROSION CONTROL MEASURES, PAYING SPECIAL ATTENTION TO ROCK BERMS IN DRAINAGE FEATURES.
- WHERE VEGETATED FILTER STRIPS ARE INDICATED, CONTRACTOR SHALL VERIFY THAT SUFFICIENT VEGETATION EXISTS, OTHERWISE CONTRACTOR SHALL PLACE SILT FENCING IN LIEU OF VEGETATED FILTER STRIP.
- SHADED AREA DENOTES LIMITS OF DISTURBED AREAS. OTHER AREAS WITHIN THE PROJECT LIMITS, WITH THE EXCEPTION OF A CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE YARD, ARE NOT A PART OF THIS TPDES STORM WATER POLLUTION PREVENTION PLAN (SWP3) AND WILL NOT BE DISTURBED BY CIVIL CONSTRUCTION ACTIVITIES. HOUSE CONSTRUCTION ACTIVITIES WILL REQUIRE A SEPARATE STORM WATER POLLUTION PREVENTION PLAN.
- PRIOR TO BEGINNING CONSTRUCTION, CONTRACTOR SHALL COORDINATE PLACEMENT OF TEMPORARY BEST MANAGEMENT PRACTICES WITHIN TXDOT RIGHT-OF-WAY WITH TXDOT.
- CPS ENERGY WILL FUNCTION AS A SECONDARY OPERATOR ON THIS PROJECT AND WILL BE INSTALLING ELECTRIC UTILITIES FOR ON-SITE CONSTRUCTION AND OFF-SITE FEED TO THE PROJECT.

THE ENGINEERING SEAL HAS BEEN AFFIXED TO THIS SHEET ONLY FOR THE PURPOSE OF DEMONSTRATING COMPLIANCE WITH THE TPDES-STORM WATER POLLUTION PREVENTION PLAN (SWP3) REGULATIONS.

THIS SHEET HAS BEEN PREPARED FOR PURPOSES OF THE SWP3 ONLY. ALL OTHER CIVIL ENGINEERING RELATED INFORMATION SHOULD BE ACQUIRED FROM THE APPROPRIATE SHEET IN THE CIVIL IMPROVEMENT PLANS.

EXHIBIT 2

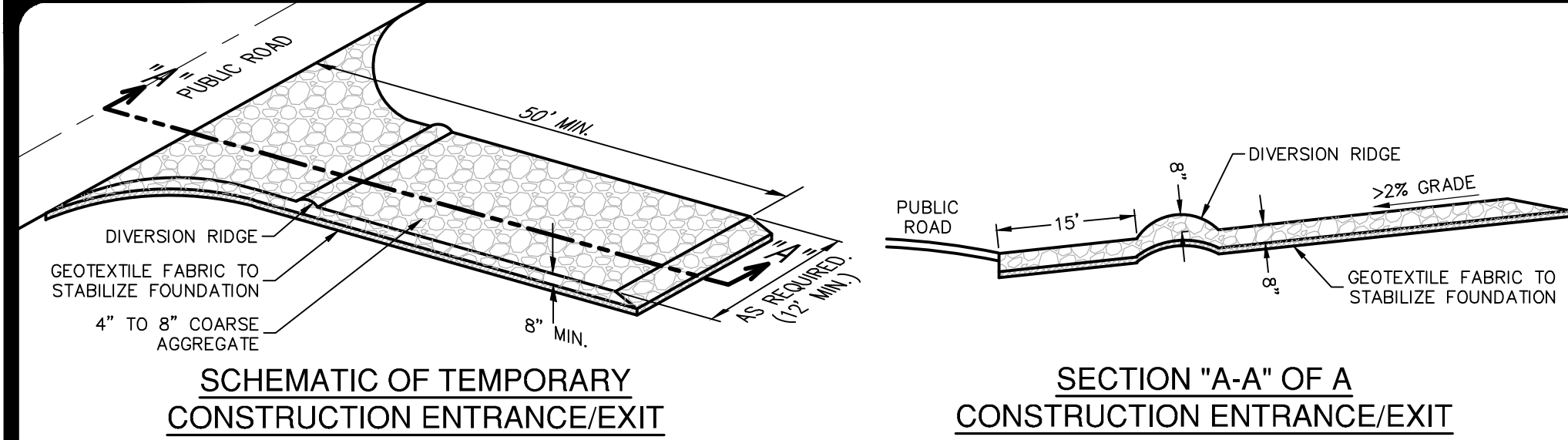
PAPE-DAWSON ENGINEERS
SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 NW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008860

SAGE RUN PHASE-2
SAN ANTONIO, TEXAS
STORMWATER POLLUTION PREVENTION PLAN

PLAT NO. 22-11800755
JOB NO. 12431-01
DATE NOVEMBER 2024
DESIGNER XX
CHECKED XX DRAWN XX
SHEET C8.00

NO.	REVISION	DATE
1	TURN LANE AND CULVERT	11/20/2024

STATE OF TEXAS
DAVID E. MARTINEZ
94900
LICENSED PROFESSIONAL ENGINEER
D. Martinez
11/20/24

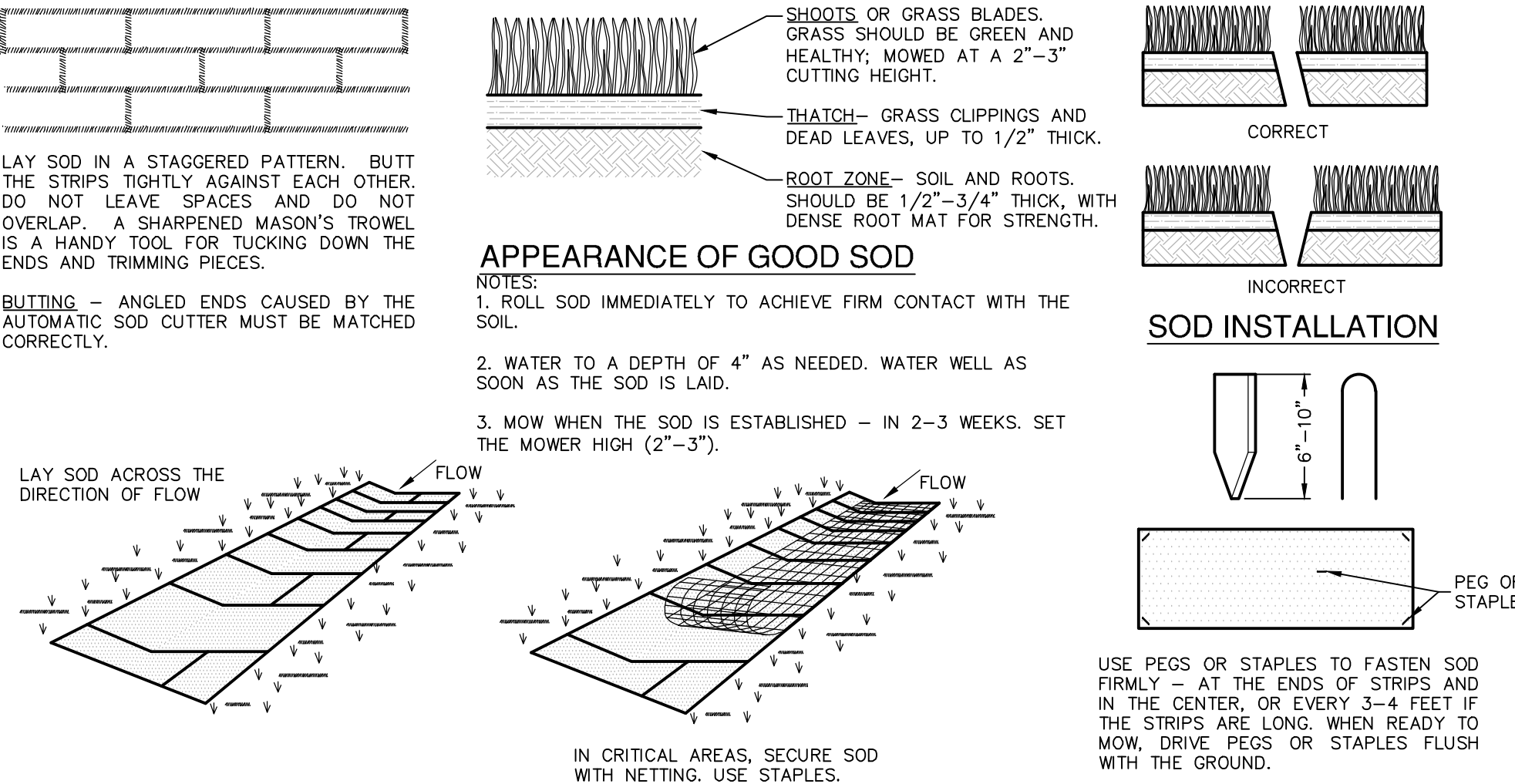


- MATERIALS**
1. THE AGGREGATE SHOULD CONSIST OF 4-INCH TO 8-INCH WASHED STONE OVER A STABLE FOUNDATION AS SPECIFIED IN THE PLAN.
 2. THE AGGREGATE SHOULD BE PLACED WITH A MINIMUM THICKNESS OF 8-INCHES.
 3. THE GEOTEXTILE FABRIC SHOULD BE DESIGNED SPECIFICALLY FOR USE AS A SOIL FILTRATION MEDIA WITH AN APPROXIMATE WEIGHT OF 6 OZ/YD², A MULLEN BURST RATING OF 140 LB/IN², AND AN EQUIVALENT OPENING SIZE GREATER THAN A NUMBER 50 SIEVE.
 4. IF A WASHING FACILITY IS REQUIRED, A LEVEL AREA WITH A MINIMUM OF 4-INCH DIAMETER WASHED STONE OR COMMERCIAL ROCK SHOULD BE INCLUDED IN THE PLANS. DIVERT WASTEWATER TO A SEDIMENT TRAP OR BASIN.

- INSTALLATION**
1. AVOID CURVES ON PUBLIC ROADS AND STEEP SLOPES. REMOVE VEGETATION AND OTHER OBJECTIONABLE MATERIAL FROM THE FOUNDATION AREA. GRADE CROWN FOUNDATION FOR POSITIVE DRAINAGE.
 2. THE MINIMUM WIDTH OF THE ENTRANCE/EXIT SHOULD BE 12 FEET OR THE FULL WIDTH OF EXIT ROADWAY, WHICHEVER IS GREATER.
 3. THE CONSTRUCTION ENTRANCE SHOULD BE AT LEAST 50 FEET LONG.
 4. IF THE SLOPE TOWARD THE ROAD EXCEEDS 2%, CONSTRUCT A RIDGE, 6-INCHES TO 8-INCHES HIGH WITH 3:1 (H:V) SIDE SLOPES, ACROSS THE FOUNDATION APPROXIMATELY 15 FEET FROM THE ENTRANCE TO DIVERT RUNOFF AWAY FROM THE PUBLIC ROAD.
 5. PLACE GEOTEXTILE FABRIC AND GRADE FOUNDATION TO IMPROVE STABILITY, ESPECIALLY WHERE WET CONDITIONS ARE ANTICIPATED.
 6. PLACE STONE TO DIMENSIONS AND GRADE SHOWN ON PLANS. LEAVE SURFACE SMOOTH AND SLOPE FOR DRAINAGE.
 7. DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE STONE PAD TO A SEDIMENT TRAP OR BASIN.
 8. INSTALL PIPE UNDER PAD AS NEEDED TO MAINTAIN PROPER PUBLIC ROAD DRAINAGE.

STABILIZED CONSTRUCTION ENTRANCE/EXIT DETAIL

NOT-TO-SCALE



- MATERIALS**
1. SOD SHOULD BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4" INCH (± 1/4" INCH) AT THE TIME OF CUTTING. THIS THICKNESS SHOULD EXCLUDE SHOOT GROWTH AND THATCH.
 2. PIECES OF SOD SHOULD BE CUT TO THE SUPPLIER'S STANDARD WIDTH AND LENGTH, WITH A MAXIMUM ALLOWABLE DEVIATION IN ANY DIMENSION OF 5%. TORN OR UNEVEN PADS SHOULD NOT BE ACCEPTABLE.
 3. STANDARD SIZE SECTIONS OF SOD SHOULD BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT, THEIR SIZE AND SHAPE WHEN SODDING FROM A FIRM GRASP ON ONE END OF THE SECTION.
 4. SOD SHOULD BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS.

SITE PREPARATION

1. PRIOR TO SOD PREPARATION, AREAS TO BE SODDED SHOULD BE BROUGHT TO FINAL GRADE IN ACCORDANCE WITH THE APPROVED PLAN.
2. THE SURFACE SHOULD BE CLEARED OF ALL TRASH, DEBRIS AND OF ALL ROOTS, BRUSH, WIRE, GRADE STAKES AND OTHER OBJECTS THAT WOULD INTERFERE WITH PLANTING, FERTILIZING OR MAINTENANCE OPERATIONS.
3. FERTILIZE ACCORDING TO SOIL TESTS. FERTILIZER NEEDS CAN BE DETERMINED BY A SOIL TESTING LABORATORY OR REGIONAL RECOMMENDATIONS CAN BE MADE BY COUNTY AGRICULTURAL EXTENSION AGENTS. FERTILIZER SHOULD BE WORKED INTO THE SOIL TO A DEPTH OF 3 INCHES WITH A DISC, SPRINGTOOTH HARROW OR OTHER SUITABLE EQUIPMENT ON SLOPING LAND, THE FINAL HARROWING OR DISCING OPERATION SHOULD BE ON THE CONTOUR.

INSTALLATION IN CHANNELS

1. SOD STRIPS IN WATERWAYS SHOULD BE LAID PERPENDICULAR TO THE DIRECTION OF FLOW. CARE SHOULD BE TAKEN TO BUTT ENDS OF STRIPS TIGHTLY (SEE FIGURE ABOVE).
2. AFTER ROLLING OR TAMPING, SOD SHOULD BE PEGGED OR STAPLED TO RESIST WASHOUT DURING THE ESTABLISHMENT PERIOD. MESH OR OTHER NETTING MAY BE PEGGED OVER THE SOD FOR EXTRA PROTECTION IN CRITICAL AREAS.

SOD INSTALLATION DETAIL

NOT-TO-SCALE

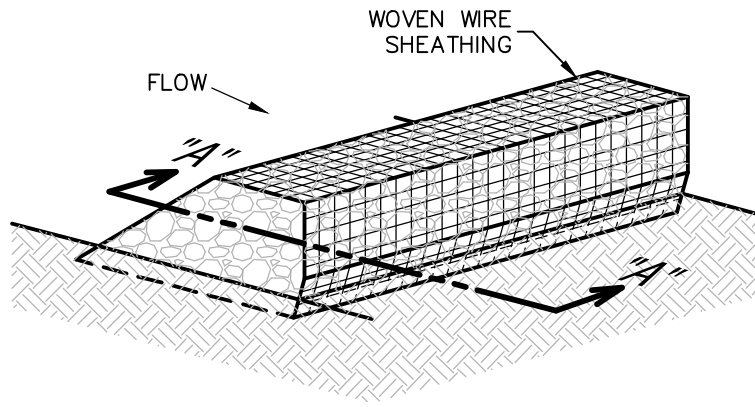
COMMON TROUBLE POINTS

1. INADEQUATE RUNOFF CONTROL-SEDIMENT WASHES ONTO PUBLIC ROAD.
2. STONE TOO SMALL OR GEOTEXTILE FABRIC ABSENT, RESULTS IN MUDDY CONDITION AS STONE IS PRESSED INTO SOIL.
3. PAD TOO SHORT FOR HEAVY CONSTRUCTION TRAFFIC-EXTEND PAD BEYOND THE MINIMUM 50-FOOT LENGTH AS NECESSARY.
4. PAD NOT FLARED SUFFICIENTLY AT ROAD SURFACE, RESULTS IN MUD BEING TRACKED ON TO ROAD AND POSSIBLE DAMAGE TO ROAD.
5. UNSTABLE FOUNDATION - USE GEOTEXTILE FABRIC UNDER PAD AND/OR IMPROVE FOUNDATION DRAINAGE.

INSPECTION AND MAINTENANCE GUIDELINES

1. THE ENTRANCE SHOULD BE MAINTAINED IN A CONDITION, WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY SHOULD BE REMOVED IMMEDIATELY BY CONTRACTOR.
3. WHEN NECESSARY, WHEELS SHOULD BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
4. WHEN WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
5. ALL SEDIMENT SHOULD BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATER COURSE BY USING APPROVED METHODS.

ISOMETRIC PLAN VIEW



ROCK BERMS

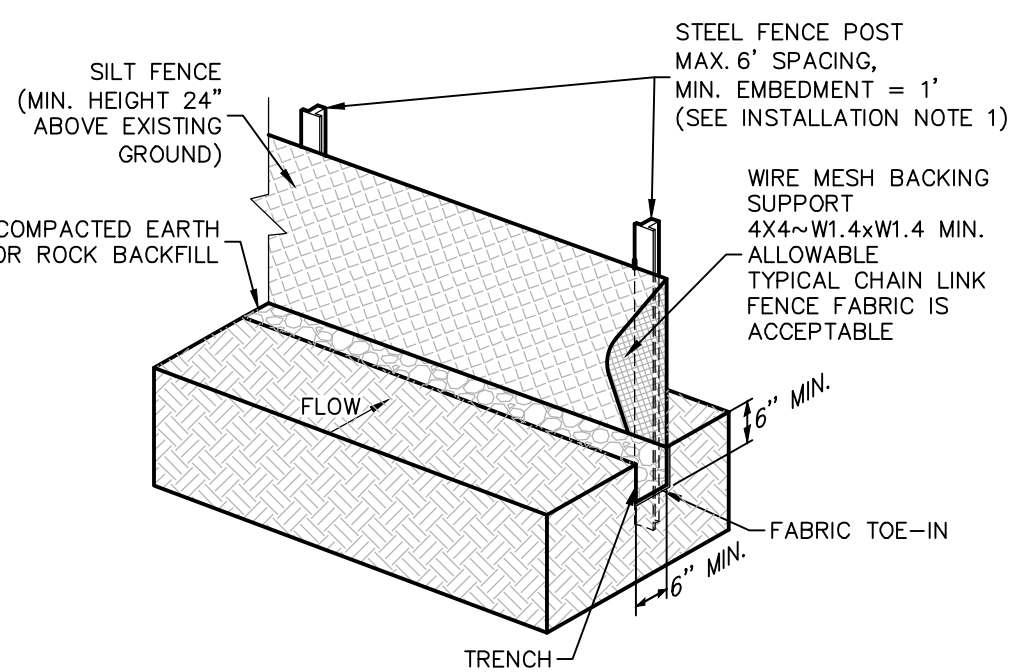
THE PURPOSE OF A ROCK BERM IS TO SERVE AS A CHECK DAM IN AREAS OF CONCENTRATED FLOW, TO INTERCEPT SEDIMENT-LADEN RUNOFF, DETAIN THE SEDIMENT AND RELEASE THE WATER IN SHEET FLOW. THE ROCK BERM SHOULD BE USED WHEN THE CONTRIBUTING DRAINAGE AREA IS LESS THAN 5 ACRES. ROCK BERMS ARE USED IN AREAS WHERE THE VOLUME OF RUNOFF IS TOO GREAT FOR A SILT FENCE TO CONTAIN. THEY ARE LESS EFFECTIVE FOR SEDIMENT REMOVAL THAN SILT FENCES, PARTICULARLY FOR FINE PARTICLES, BUT ARE ABLE TO WITHSTAND HIGHER FLOWS THAN A SILT FENCE. AS SUCH, ROCK BERMS ARE OFTEN USED IN AREAS OF CHANNEL FLOWS (DITCHES, GULLIES, ETC.). ROCK BERMS ARE MOST EFFECTIVE AT REDUCING BED LOAD IN CHANNELS AND SHOULD NOT BE SUBSTITUTED FOR OTHER EROSION AND SEDIMENT CONTROL MEASURES FARTHER UP THE WATERSHED.

INSPECTION AND MAINTENANCE GUIDELINES

1. INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL BY THE RESPONSIBLE PARTY. FOR INSTALLATIONS IN STREAMBEDS, ADDITIONAL DAILY INSPECTIONS SHOULD BE MADE.
2. REMOVE SEDIMENT AND OTHER DEBRIS WHEN BUILDUP REACHES 6 INCHES AND DISPOSE OF THE ACCUMULATED SILT IN AN APPROVED MANNER THAT WILL NOT CAUSE ANY ADDITIONAL SILTATION.
3. REPAIR ANY LOOSE WIRE SHEATHING.
4. THE BERM SHOULD BE RESHAPED AS NEEDED DURING INSPECTION.
5. THE BERM SHOULD BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.
6. THE ROCK BERM SHOULD BE LEFT IN PLACE UNTIL ALL UPSTREAM AREAS ARE STABILIZED AND ACCUMULATED SILT REMOVED.

ROCK BERM DETAIL

NOT-TO-SCALE



SILT FENCE

A SILT FENCE IS A BARRIER CONSISTING OF GEOTEXTILE FABRIC SUPPORTED BY METAL POSTS TO PREVENT SOIL AND SEDIMENT LOSS FROM A SITE. WHEN PROPERLY USED, SILT FENCES CAN BE HIGHLY EFFECTIVE AT CONTROLLING SEDIMENT FROM DISTURBED AREAS. THEY CAUSE RUNOFF TO POND, ALLOWING HEAVIER SOLIDS TO SETTLE OUT. IF NOT PROPERLY INSTALLED, SILT FENCES ARE NOT LIKELY TO BE EFFECTIVE.

THE PURPOSE OF A SILT FENCE IS TO INTERCEPT AND DETAIN WATER-BORN SEDIMENT FROM UNPROTECTED AREAS OF A LIMITED EXTENT. SILT FENCE IS USED DURING THE PERIOD OF CONSTRUCTION NEAR THE PERIMETER OF A DISTURBED AREA TO INTERCEPT SEDIMENT WHILE ALLOWING WATER TO PERCOLATE THROUGH. THIS FENCE SHOULD REMAIN IN PLACE UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED. SILT FENCE SHOULD NOT BE USED WHERE THERE IS A CONCENTRATION OF WATER IN A CHANNEL OR DRAINAGE WAY. IF CONCENTRATED FLOW OCCURS AFTER INSTALLATION, CORRECTIVE ACTION MUST BE TAKEN SUCH AS PLACING A ROCK BERM IN THE AREAS OF CONCENTRATED FLOW.

SILT FENCING WITHIN THE SITE MAY BE TEMPORARILY MOVED DURING THE DAY TO ALLOW CONSTRUCTION ACTIVITY PROVIDED IT IS REPLACED AND PROPERLY ANCHORED TO THE GROUND AT THE END OF THE DAY. SILT FENCES ON THE PERIMETER OF THE SITE OR AROUND DRAINAGE WAYS SHOULD NOT BE MOVED AT ANY TIME.

MATERIALS

1. SILT FENCE MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE, OR POLYAMIDE WOVEN OR NONWOVEN FABRIC. THE FABRIC SHOULD BE 36 INCHES, WITH A MINIMUM UNIT WEIGHT OF 4.5 OZ/YD, MULLEN BURST STRENGTH EXCEEDING 190 LB/IN², ULTRAVIOLET STABILITY EXCEEDING 70%, AND MINIMUM APPARENT OPENING SIZE OF U.S. SIEVE NUMBER 30.
2. FENCE POSTS SHOULD BE MADE OF HOT ROLLED STEEL, AT LEAST 4 FEET LONG WITH TEE OR Y-BAR CROSS SECTION, SURFACE PAINTED OR GALVANIZED, MINIMUM WEIGHT 1.25 LB/FT, AND BRINDELL HARDNESS EXCEEDING 140.
3. WOVEN WIRE BACKING TO SUPPORT THE FABRIC SHOULD BE GALVANIZED 2" X 4" WELDED WIRE, 12 GAUGE MINIMUM.

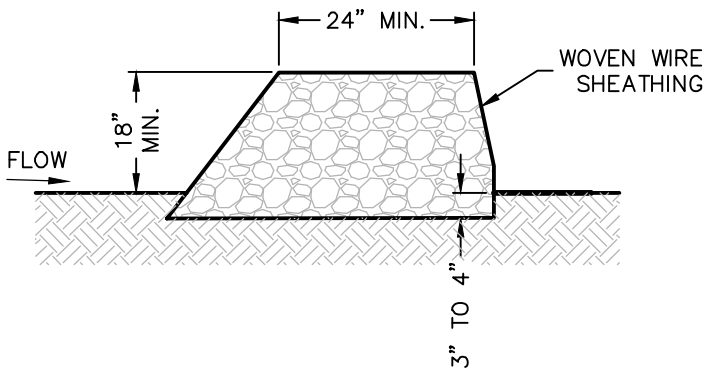
INSTALLATION

1. STEEL POSTS, WHICH SUPPORT THE SILT FENCE, SHOULD BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POSTS MUST BE EMBEDDED A MINIMUM OF 1-FOOT DEEP AND SPACED NOT MORE THAN 8 FEET ON CENTER. WHERE WATER CONCENTRATES, THE MAXIMUM SPACING SHOULD BE 6 FEET.
2. LAY OUT FENCING DOWN-SLOPE OF DISTURBED AREA, FOLLOWING THE CONTOUR AS CLOSELY AS POSSIBLE. THE FENCE SHOULD BE SITED SO THAT THE MAXIMUM DRAINAGE AREA IS ¼ ACRE/100 FEET OF FENCE.

SILT FENCE DETAIL

NOT-TO-SCALE

SECTION "A-A"



MATERIALS

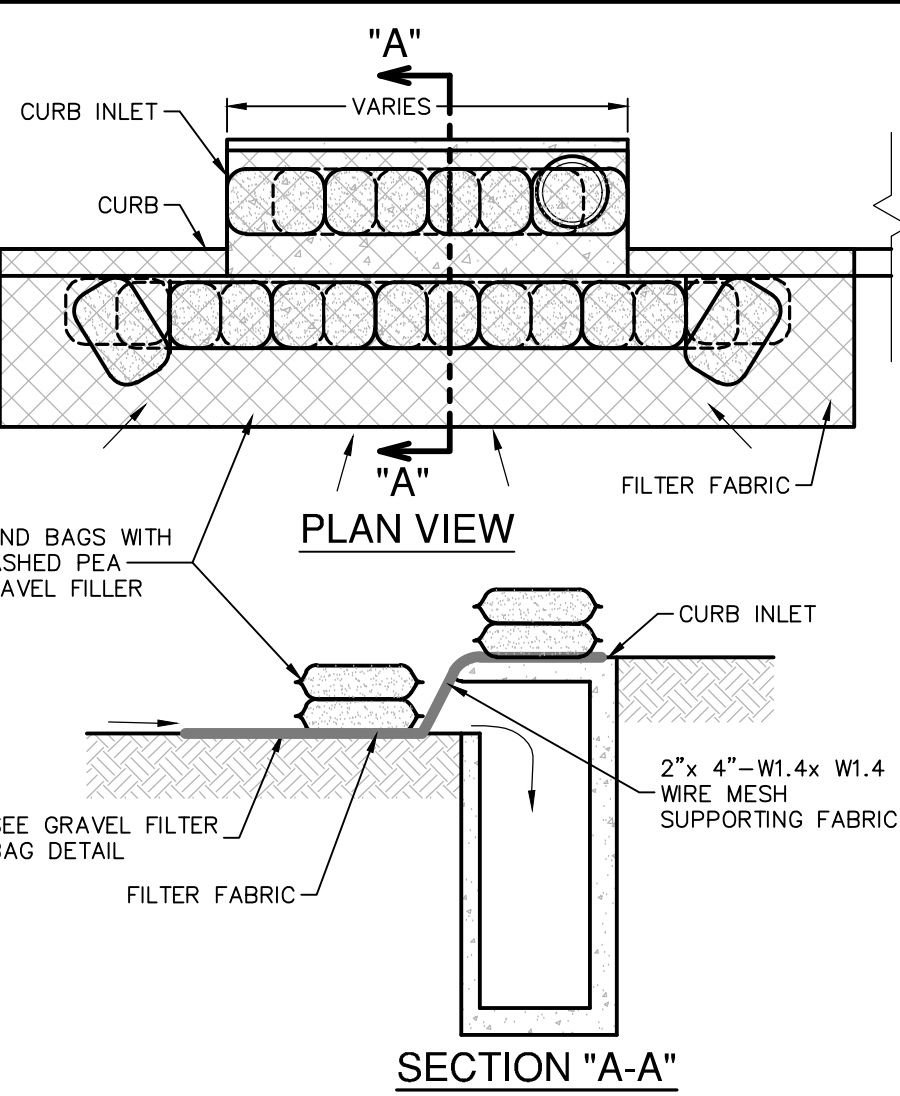
1. THE BERM STRUCTURE SHOULD BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM OPENING OF 1 INCH AND A MINIMUM WIRE DIAMETER OF 20 GAUGE GALVANIZED AND SHOULD BE SECURED WITH SHOAT RINGS.
2. CLEAN, OPEN GRADED 3-INCH TO 5-INCH DIAMETER ROCK SHOULD BE USED, EXCEPT IN AREAS WHERE HIGH VELOCITIES OR LARGE VOLUMES OF FLOW ARE EXPECTED, WHERE 5-INCH TO 8-INCH DIAMETER ROCKS MAY BE USED.

INSTALLATION

1. LAY OUT THE WOVEN WIRE SHEATHING PERPENDICULAR TO THE FLOW LINE. THE SHEATHING SHOULD BE 20 GAUGE WOVEN WIRE MESH WITH 1 INCH OPENINGS.
2. BERM SHOULD HAVE A TOP WIDTH OF 2 FEET MINIMUM WITH SIDE SLOPES BEING 2:1 (H:V) OR FLATTER.
3. PLACE THE ROCK ALONG THE SHEATHING AS SHOWN IN THE DIAGRAM TO A HEIGHT NOT LESS THAN 18".
4. WRAP THE WIRE SHEATHING AROUND THE ROCK AND SECURE WITH TIE WIRE SO THAT THE ENDS OF THE SHEATHING OVERLAP AT LEAST 2 INCHES, AND THE BERM RETAINS ITS SHAPE WHEN WALKED UPON.
5. BERM SHOULD BE BUILT ALONG THE CONTOUR AT ZERO PERCENT GRADE OR AS NEAR AS POSSIBLE.
6. THE ENDS OF THE BERM SHOULD BE TIED INTO EXISTING UPSLOPE GRADE AND THE BERM SHOULD BE BURIED IN A TRENCH APPROXIMATELY 3 TO 4 INCHES DEEP TO PREVENT FAILURE OF THE CONTROL.

COMMON TROUBLE POINTS

1. INSUFFICIENT BERM HEIGHT OR LENGTH (RUNOFF QUICKLY ESCAPES OVER THE TOP OR AROUND THE SIDES OF BERM).
2. BERM NOT INSTALLED PERPENDICULAR TO FLOW LINE (RUNOFF ESCAPING AROUND ONE SIDE).

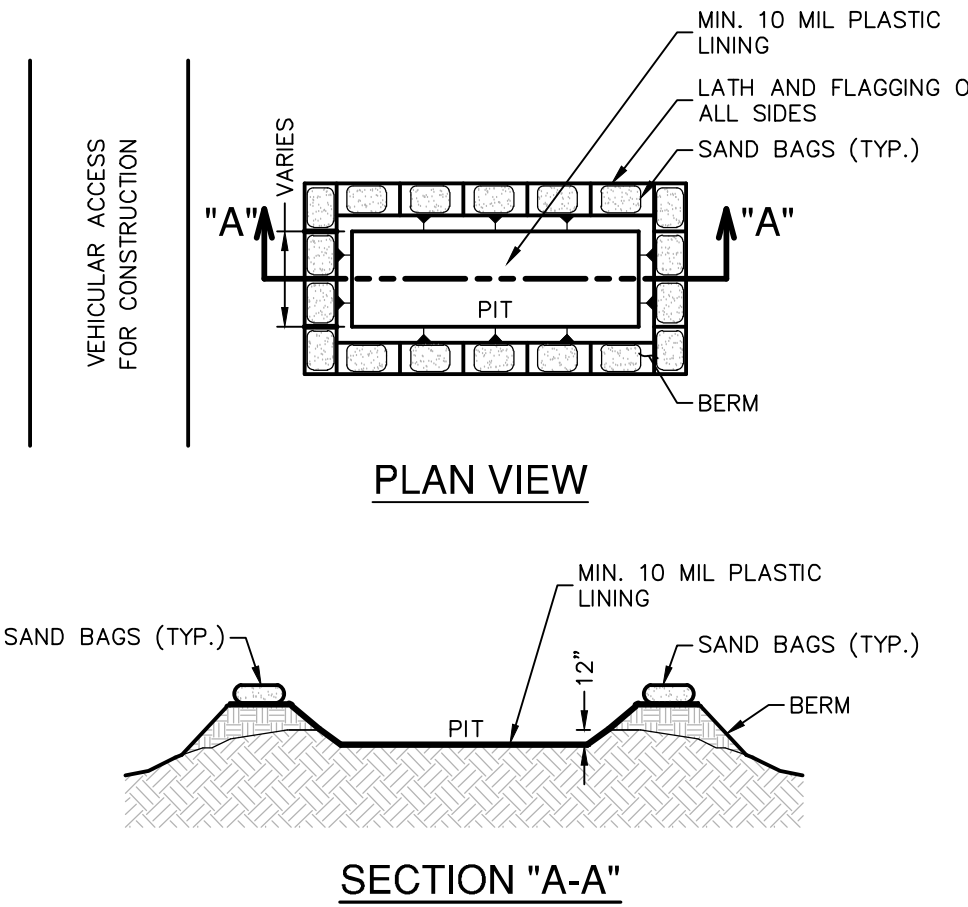


GENERAL NOTES

1. CONTRACTOR TO INSTALL 2"x4"-W1.4xW1.4 WIRE MESH SUPPORTING FILTER FABRIC OVER THE INLET OPENING. FABRIC MUST BE SECURED TO WIRE BACKING WITH CLIPS OR WIRE TIES AT THIS LOCATION. SAND BAGS FILLED WITH WASHED PEA GRAVEL SHOULD BE PLACED ON TOP OF WIRE MESH ON TOP OF THE INLET AS SHOWN ON THIS DETAIL TO HOLD WIRE MESH IN PLACE. SANDBAGS FILLED WITH WASHED PEA GRAVEL SHOULD ALSO BE PLACED ALONG THE CUTTER AS SHOWN ON THIS DETAIL TO HOLD WIRE MESH IN PLACE. SAND BAGS TO BE STACKED TO FORM A CONTINUOUS BARRIER AROUND INLETS.
2. THE BAGS SHOULD BE TIGHTLY ABUTTED AROUND EACH OTHER TO PREVENT RUNOFF FROM FLOWING BETWEEN THE BAGS.
3. CHECK PLACEMENT OF DEVICE TO PREVENT GAPS BETWEEN DEVICE AND CURB.
4. INSPECT FILTER FABRIC AND PATCH OR REPLACE IF TORN OR MISSING.
5. STRUCTURES SHOULD BE REMOVED AND THE AREA STABILIZED ONLY AFTER THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

BAGGED GRAVEL CURB INLET PROTECTION DETAIL

NOT-TO-SCALE



GENERAL NOTES

1. DETAIL ABOVE ILLUSTRATES MINIMUM DIMENSIONS. PIT CAN BE INCREASED IN SIZE DEPENDING ON EXPECTED FREQUENCY OF USE.
2. WASHOUT PIT SHALL BE LOCATED IN AN AREA EASILY ACCESSIBLE TO CONSTRUCTION TRAFFIC.
3. WASHOUT PIT SHALL NOT BE LOCATED IN AREAS SUBJECT TO INUNDATION FROM STORM WATER RUNOFF.
4. LOCATE WASHOUT AREA AT LEAST 50 FEET FROM SENSITIVE FEATURES, STORM DRAINS, OPEN DITCHES OR WATER BODIES.
5. TEMPORARY CONCRETE WASHOUT FACILITY SHOULD BE CONSTRUCTED WITH SUFFICIENT QUANTITY AND VOLUME TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS.

MATERIALS

PLASTIC LINING MATERIAL SHOULD BE A MINIMUM OF 10 MIL IN POLYETHYLENE SHEETING AND SHOULD BE FREE OF HOLES, TEARS, OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.

MAINTENANCE

1. WHEN TEMPORARY CONCRETE WASHOUT FACILITIES ARE NO LONGER REQUIRED FOR THE WORK, THE HARDENED CONCRETE SHOULD BE REMOVED AND DISPOSED OF.
2. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF.
3. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCES CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE BACKFILLED AND REPAIRED.

CONCRETE TRUCK WASHOUT

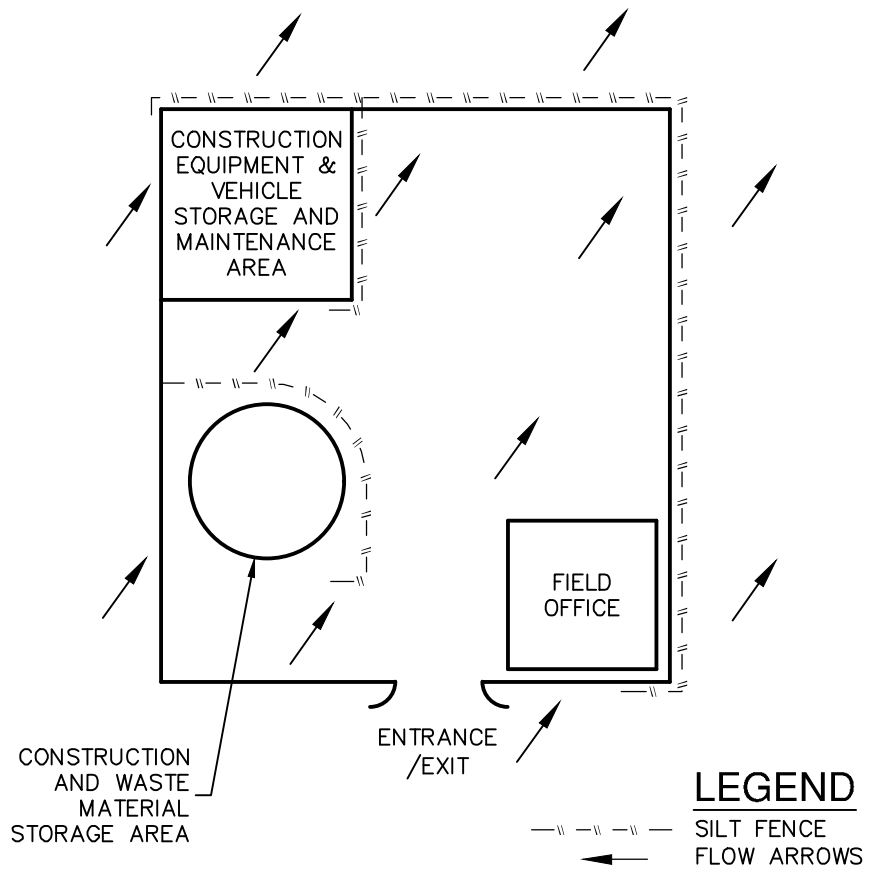
PIT DETAIL

NOT-TO-SCALE

- NOTES:
1. THE FILTER BAG MATERIAL SHALL BE MADE OF POLYPROPYLENE, POLYETHYLENE OR POLYAMIDE WOVEN FABRIC, MIN. UNIT WEIGHT OF 4 OUNCES/SY, HAVE A MULLEN BURST STRENGTH EXCEEDING 300 PSI AND ULTRAVIOLET STABILITY EXCEEDING 70%.
 2. THE FILTER BAG SHALL BE FILLED WITH CLEAN, MEDIUM WASHED PEA GRAVEL TO COARSE GRAVEL (0.31 TO 0.75 INCH DIAMETER).
 3. SAND SHALL NOT BE USED TO FILL THE FILTER BAGS.

GRAVEL FILTER BAG DETAIL

NOT-TO-SCALE



CONSTRUCTION STAGING AREA

NOT-TO-SCALE

THE ENGINEERING SEAL HAS BEEN AFFIXED TO THIS SHEET ONLY FOR THE PURPOSE OF DEMONSTRATING COMPLIANCE WITH THE TPDES-STORM WATER POLLUTION PREVENTION PLAN (SWP3) REGULATIONS.

THIS SHEET HAS BEEN PREPARED FOR PURPOSES OF THE SWP3 ONLY. ALL OTHER CIVIL ENGINEERING RELATED INFORMATION SHOULD BE ACQUIRED FROM THE APPROPRIATE SHEET IN THE CIVIL IMPROVEMENT PLANS.

EXHIBIT 3

NO.	REVISION	DATE



PAPE-DAWSON ENGINEERS

SAN ANTONIO | AUSTIN | HOUSTON | FORT WORTH | DALLAS
2000 HW LOOP 410 | SAN ANTONIO, TX 78213 | 210.375.9000
TEXAS ENGINEERING FIRM #470 | TEXAS SURVEYING FIRM #1008860

SAGE RUN, PHASE-2
SAN ANTONIO, TEXAS

STORMWATER POLLUTION PREVENTION DETAILS

PLAT NO.	22-11800755
JOB NO.	12431-01
DATE	FEBRUARY 2024
DRAWN	JS
CHECKED	VS
SHEET	C8.01